SWAZILAND

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1963

HCP AG944

S W A Z I L A N D

ANNUAL MEDICAL AND SANITARY REPORT 1963

CONTENTS

GENERAL REVIEW

Swaziland has an area of 6,704 square miles and is bordered on the north, west and south by the Transvaal, and on the east by Mocambique and Zululand.

The Territory is geographically divided into four well defined regions, running from north to south, namely the mountainous highveld in the west with an altitude of 3,500 and 5,000 feet; the middleveld with an average altitude of 2,000 feet; and the lowveld or bushveld with an altitude of 700 feet to 300 feet, and the Lubombo Plateau on the east, with an altitude of 2,000 feet. Scenically the Territory is one of the most attractive parts of Africa. The highveld has a temperate climate and frosts occur during the winter. The climate of the middleveld is subtropical and that of the bushveld is almost tropical.

Rainfall, which occurs chiefly in the summer, varies between approximately 60" a year in the highveld and approximately 30" a year in the lowveld. Drizzle and mists are frequent in the highveld areas. The country is well-watered by numerous perennial streams and rivers, some of which are of a considerable size and now provide water for three large irrigation schemes which have been established at Mhlume in the north-east, at Big Bend in the east (at both of which sugar is grown) and at Malkerns in the centre of Swaziland (which produces rice, sub-tropical fruit and citrus).

In addition to the irrigation schemes, other important agricultural activities are cattle ranching in the bushveld and sub-tropical fruit and rice production in the middleveld, in the southern portion of which a considerable amount of tobacco is also grown. Significant mining development is at present restricted to the production of asbestos at Havelock Mine in the north-west, but with the opening of the rail link with Mocambique towards the end of 1964, large iron ore deposits, and probably coal as well, will be mined. A pulp mill and a sawmill are operating at two of the forestry concerns.

A census of the European and Eurafrican sections of the population was held in 1962, and an estimate was made of the African population at the same time. The resultant figures were:- Africans 270,000, Europeans 8,040 and Eurafricans 2,260. One half of the area of the territory is in communal ownership of the Swazi Nation and the remainder owned by individual tenure farmers. The Swazi have the exclusive use of the communal tenure areas and the remainder is open to farmers of all races without discrimination. Swazi dwellings for the most part consist of wattle-and-daub structures, or bee-hive huts, and small family collections of these huts are widely dispersed. Other than in the neighbourhood of the larger towns, there are no villages. Whilst the agricultural activities of the Swazi are still, in the main, concentrated on the raising of cattle and goats and the cultivation of maize, the work of the Agricultural Department is now producing results, and both the standard and scope of Swazi farming are improving year by year.

There are Government hospitals at Mbabane (151 beds), Hlatikulu (137 beds), Piggs Peak (39 beds) and Mankaiana (28 beds), and there are the following Mission hospitals:-

/Raleigh Fitkin ...

Raleigh Fitkin Memorial Hospital, Manzini	-	246 beds
Mahamba Methodist Hospital, Mahamba	-	45 beds
St. Theresa Clinic, Manzini	-	40 beds
Good Shepherd Hospital, Stegi	-	35 beds

There is also a 12-bedded private Nursing Home in Mbabane. In addition there are 38 Clinics in the outlying areas, staffed by trained nurses, 24 of these being conducted by Missions, and 14 by Government. Havelock Mine has its own hospital and four other large industrial concerns provide medical facilities, based on clinics, for their employees.

The number of medical practitioners working in Swaziland is now 39, 16 of these being in private practice or in the employment of industrial concerns, 13 being in Government service, and 10 being medical missionaries. There is thus 1 doctor per 7,188 persons in Swaziland, in comparison with the accepted Western European standard of 1 doctor for 1,000 patients and the "South of the Sahara" average of 1 doctor per 10,000 persons. The 743 hospital beds in use in Swaziland give a ratio of 2.7 beds per 1,000 persons, as against the Western European average of 4 - 5 beds per 1,000.

The Mbuluzi Leper Hospital, situated 10 miles from Mbabane and run by the Nazarene Mission, with the assistance of a Government grant, copes most adequately with the small number of lepers in the Territory. There is no special tuberculosis hospital, but three general hospitals have separate tuberculosis wards. There is also no mental hospital, and dangerous and violent lunatics are detained and treated in sections of the gaols.

The British Red Cross Society is now running Infant Welfare Clinics at Mbabane, Hlatikulu, Stegi, Pigg's Peak, Mhlambanyati and Goedgegun, at which most useful work is being done.

The public health services of the Territory are centred at the Health Office, Manzini, under the control of the Medical Officer of Health, in whose charge are also the malaria control unit and the bilharzia investigation unit.

The Medical Association of Swaziland, whose members include private practitioners, medical missionaries and Government medical officers, hold quarterly meetings, which are usually well supported and which make up to some extent for the lack of professional contact so common in territories such as Swaziland.

The Medical Department staffing position has remained satisfactory during 1963. A new Medical Officer of Health post and three Medical Officer posts which had become vacant through resignation or completion of contract were filled, chiefly by recruitment by the Department of Technical Co-operation. It has not yet been possible to provide housing for a Medical Officer at Mankaiana and this post remains open. A further Medical Officer post will become available when certain extensions to Mbabane Hospital can be opened. Applications for employment from African Staff Nurses continued to pour in and far exceeded the demand. Details of the staff at the various Government hospitals and at the Health Office will be found in the Appendix.

The training of nurses in Swaziland is carried out at the Ainsworth Dickson Training College attached to the Raleigh Fitkin Memorial Hospital, where training for the High Commission Territories Nursing Council qualifications in General

/Nursing...

Nursing, lasting 4 years, and in Midwifery, lasting 1 year, is given. The Ainsworth Dickson Training College can at present train sufficient nurses for the needs of Swaziland. Dispensers and Laboratory Assistants are trained at Government hospitals as required.

Since the successful malaria control programme has resulted in the near-eradication of the disease from Swaziland, tuberculosis is now the main health problem and the W.H.O. Tuberculosis Control Team is now operating, with its headquarters in an extension built onto the Health Office in Manzini, which consists of outpatient clinic, X-ray room, laboratory and office. Bilharzia is wide-spread among the indigenous population, and whilst the clinical manifestations are usually minimal, it is felt that a potentially very dangerous position exists at the irrigation schemes, and a careful watch is being kept on conditions here. Malnutrition and infantile diarrhoea are important causes of ill-health and death amongst young children, the former being especially noticeable at the post-weaning age, and heart diseases and pneumonia also rank high as causes of death.

The conditions which cause most attendances at Government hospitals are acute upper respiratory tract infections, diseases of the genito-urinary system, minor disorders of the digestive system, venereal disease, rheumatism and infections of the skin and subcutaneous tissues. Among the infectious diseases, enteric fever was again very prevalent, although the majority of cases occurred sporadically, and for the first time for 13 years small-pox occurred, 182 cases of mild alastrim being reported.

On 12th March, 1963, His Excellency the High Commissioner opened the new Nurses Home and the extensions to the private wards at Raleigh Fitkin Memorial Hospital, Manzini, which had been built with the assistance of C.D.& W. funds.

At the end of the year, Miss L. Martin, W.H.O. Regional Adviser in Health Education, visited Swaziland.

CHAPTER I - PUBLIC HEALTH

(a) COMMUNICABLE DISEASES.

I. TUBERCULOSIS.

1.1. W.H.O. Tuberculosis Project.

All the International members of the WHO Tuberculosis Control team with the exception of the Public Health Nurse, arrived in the territory during the first quarter of the year. Work was immediately started and the first survey undertaken was an accessibility survey of the Pilot Project Area, which consists of the Manzini Administration district, as defined before the recent reduction in the number of districts.

In order to train locally recruited staff in the methods to be used on the project and also to allow the International staff to familiarise themselves with local conditions an area outside the Pilot Project area was selected as a Training Area. This training area consists of the Ezulwini Valley including Lobamba and has a population of approximately 5000 inhabitants.

During the year the locally recruited staff have received training in this area and at the Tuberculosis Centre in Manzini. Most of the recruits have become familiar with the methods used by the Team and have become reasonably proficient in the special spheres in which they have been trained. They are now in a position to be able to carry out their duties in the Project area which will be tackled early in the new year.

Work in the training area has consisted of registration of the population, preliminary case finding by X-Ray and direct microscopy, treatment of positive cases, chemoprophylactic treatment of contacts and follow-up studies. The area has not been completely covered yet and this is due to the difficulties experienced by the team in getting the full co-operation of the people. The political situation in relation to the new Constitution and the Incwala Ceremony appear to have been responsible for most of the difficulties experienced.

Due to the fact that the Public Health Nurse has not yet arrived, no Tuberculin testing or B.C.G. Vaccination has been carried out.

During the course of the year the Pilot Project area has been surveyed and divided into 28 sub-areas each of which has been carefully mapped, the map showing the exact number and position of each kraal. The sub-areas each carry a population of approximately 2000 inhabitants. There are 25 rural sub-areas and three urban sub-areas.

Apart from the people examined in the Training Area X-Ray examination of Government Servants and Prisoners in Manzini township was undertaken. The staff employed by Swaziland Plantations Limited, Piggs Peak, and their relatives were also X-Rayed. Sputum specimens were taken from all persons showing evidence of Pulmonary pathology on X-Ray.

/By the end...

By the end of the year, 3254 persons had been X-Rayed. Of these 181 showed relevant shadows (5.5%) and 37 (1.1%) were found to be excreting acid fast bacilli.

Training of local personnel being almost complete, work in the Pilot Project area should get started early in the new year.

Staff.

The staffing of the project when complete will consist of six International Members; namely (1) The Senior Medical Officer, (2) Bacteriologist, (3) Statistician, (4) Laboratory Technician, (5) X-Ray Technician and (6) Public Health Nurse.

Locally recruited staff consist of the following members:-

Home Visitors	16
Clerks	5
Drivers	2
Laboratory Assist.	2
X-Ray Assistants	2
Total.	27

1.2. 1176 cases were admitted to Government and Mission Hospitals during the year.

These cases were classified as follows:

	Cases	Deaths
Respiratory	915	63
Meninges	10	3
Intestine & Peritonium	43	-
Bones & Joints	43	1
All other forms	165	-

In 1962 1156 cases were admitted.

2. MALARIA.

This report covers the transmission period 1.7.62 to 30.6.63.

2.1. General Review.

The malaria position in the territory remains very satisfactory. The incidence of the disease in the indigenous population has fallen to the low figure of 0.1% and the Annual Parasite Incidence has been reduced to 0.32 per 1000. There has been a steady decline in the number of positive cases seen and as the effects of the control programme now being undertaken in Mozambique become apparent, the situation in Swaziland should improve further.

The number of blood films examined annually has been gradually increased to the present figure of 25,339, which is about the maximum that the existing laboratory staff can cope with. This figure gives an Annual Blood Examination Rate of 22%, which is most satisfactory. The examination of such large numbers of blood films is an essential part of Surveillance and is carried out for the express purpose of detecting any residual foci of infection among the indigenous population, and also to check on the cause of any febrile conditions found. Further, by this means an endeavour is made to trace all parasite carrying immigrants so that they may be adequately treated.

/All positive

All positive cases found are adequately treated and an endeavour is made to follow them up at fortnightly intervals to ensure that they remain parasite free.

In the entomological field all investigations have shown that the A.gambiae dealt with throughout the year have still exhibited their exophilic-zoophilic behaviour and as such do not constitute any real danger from the malaria transmission point of view. However, careful observations are taken regularly in all areas to observe any change in behaviour of this mosquito.

The so-called A.funestus that have made their re-appearance cannot be considered as the type form as precipitin tests have shown them all to be bovid fed.

2.2. Analysis of Blood Films Examined.

(a) From indigenous Population.

	Total.	Infants.	Children.	Adults.
Total examined	22842	1811	13758	7273
No. Positive	33	Nil	15	18
Slide positivity Rate	0.14%	Nil	0.1%	0.25%

Annual Parasite Incidence.

A survey showed that the population at risk in the malarious area was 101,730, therefore with 33 positive blood films the Annual Parasite Incidence was 0.32 per thousand.

Annual Blood Examination Rate of population at risk = 22.4%

(b) From Immigrants.

	Total.	Infants.	Children.	Adults.
Total examined	2497	57	250	2190
No. Positive	94	Nil	26	68
Slide positivity Rate	3.8%	Nil	10.4%	3.1%

A full report on the work of the malaria unit is attached at the end of the report as an appendix.

3. BILHARZIA.

A full report of the work of the Bilharzia Control Unit appears in the appendix.

As mentioned in the Annual Report for 1962, frequent surveys were again carried out on the dam and stream at Phonjwana. It was found that good control had been obtained over Physopsis, these snails were not found until December 1963, showing there was freedom from these snails for fifteen months. On the other hand the sulphation had little apparent effect on B.forskalii.

During the year no fresh experiments were carried out on treatment in the field.

/4. POLIOMYELITIS.

4. POLIOMYELITIS. Four cases.

Three of these cases were notified from Piggs Peak District. The first case was reported on the 1st July, the second came at the end of August and the third in November. The other case came from the Hlatikulu District. No connection could be shewn between the cases from Piggs Peak District.

5. DIPHTHERIA. Eighteen cases with eight deaths.

There was a definite increase from last year but again the cases were widely scattered, there being no definite relationship to the weather. More cases would be expected in the cold weather since the houses would be closed up against the cold with a consequent lack of ventilation. The months in which the cases occurred were January 1, February 1, April 2, May 1, June 4, September 3, November 1 and December 5.

6. ENTERIC FEVER. Three hundred and seventy-eight cases with fourteen deaths.

6.1. As reported last year the notified cases of enteric fever are on the increase. The following table shows the number of cases and deaths for the last five years.

1959	141 cases	8 deaths
1960	202 cases	14 deaths
1961	285 cases	15 deaths
1962	334 cases	18 deaths
1963	378 cases	14 deaths

As these notifications came only from hospitals, it is obvious that many cases were not seen.

6.2. Vaccination against typhoid was carried out at the Manzini Health Office, Mbabane Health Office and in the field:

1st dose	2nd dose	Booster	Totals
11,414	8,352	4	19,770

73% presented themselves for the second inoculation compared with 69% last year.

7. SMALL POX. One hundred and eighty-two cases with two deaths.

7.1. During the year 182 cases of variola minor were notified. The first cases were reported in April from Hlatikulu and Mahamba. In May the disease had spread to Goedgegun and Stegi, in June to Manzini and in July to Mbabane.

The disease was very mild and there is reason to believe that many cases were missed. It was not possible to discover the original source of infection but similar cases had occurred across the border in the Transvaal and Natal.

Two deaths were reported, both in children. Investigations suggested that the deaths were due to other causes.

/The 182 cases....

The 182 cases were reported from the following districts:

Hlatikulu	134
Manzini	26
Stegi	15
Mbabane	7
	182

7.2. Vaccinations.

86,952 vaccinations were carried out by the Health Officers during the year. 77,786 were performed in the field, 3,345 in the Health Office, Manzini and 5,821 in the Health Office, Mbabane.

The number of vaccinations carried out in Government and Mission Hospitals was 3,506, the total vaccinations for the year being 90,458.

8. OTHER INFECTIOUS DISEASES.

Meningococcal Meningitis was reported on five occasions. Chicken Pox, Measles and Whooping Cough were reported from all districts.

9. VENEREAL DISEASES.

In 1962 there were 2,255 cases of Syphilis and 4,194 cases of Gonorrhoea. The figures for this year are 2,419 cases of Syphilis and 3,889 cases of Gonorrhoea. There were 6,882 re-attendances for Syphilis and 5,548 for Gonorrhoea.

10. LEPROSY.

The report on the Mbuluzi Leper Colony for the year will be found in the Appendix to this report.

(b) NUTRITIONAL AND DEFICIENCY DISEASES.

1.1. In the report for 1962, mention was made of the Nutrition Survey carried out by Miss Sonya Jones, M.Sc. The report of this survey has now been received.

The survey has shown that the Swazi diet is definitely deficient in calories protein, calcium and niacin, while Vitamin A and riboflavin are deficient to only a moderate degree.

Dietary iron was found to be from adequate to abundant, although anaemia is moderately common.

1.1.2. In the coming year a training programme will be undertaken by the Swaziland Government, F.A.O., UNICEF and W.H.O. This project will be known as the Nutrition and Agricultural Extension Training Programme. Seven selected areas to be known as Betterment Areas will be chosen and for the first two years all efforts will be concentrated in these areas.

The following technical training courses are expected to be held.

(a) Courses for Assistant Agricultural Officers and Agricultural Assistants.
(b) Courses for Domestic Science Demonstrators.
(c) Courses for Teachers.
(d) Courses for local leaders and farmers.
(e) Course in poultry keeping.
(f) Course for leaders of womens organisations and progressive farmers wives.

In the Betterment Areas attention will be paid to a school feeding programme. This programme will be based on locally available foods. Eggs and garden produce will be provided by farmers in repayment for loans received from UNICEF.

School feeding is essential in this territory. Owing to the absence of villages where one would have a concentration of people, and the kraals scattered over a wide area, the average Swazi child is required to walk from two to five miles to school. It often means that he has to leave home before breakfast and does not receive any food until he returns home late in the afternoon. This absence of food has a deleterious effect on his physical and mental health.

1.2. The Health Education/Nutrition Unit started work in the field on the 25th February, concentrating mainly on the districts of Mbabane and Manzini.

Lectures with the aid of flannelgraphs were given on the following subjects:

(a) Food and health.
(b) Kwashiorkor.
(c) Pellagra
(d) Feeding of foetus in utero.
(e) Environmental hygiene.
(f) Tuberculosis
(g) Maternal and child nutrition.
(h) Customs and beliefs - their effect on health.
(i) Dangers of enema.
(j) Growth and nutrition.

/These lectures....

These lectures were given to the following groups:-

School children	11,127
Adult males	1,085
Adult females	1,064
Mixed adult groups	1,531
Teachers	157
	14,964

During June and July the Unit visited the several Agricultural Shows. The most important show is at Manzini, where a stall was erected. Practical demonstrations were given on the cooking of jugo bean soup, mung bean soup and mixed vegetable dishes. Samples were offered to the spectators - many requests were made for the recipes.

Displayed on the stall were large photographs of babies with kwashiorkor and other forms of malnutrition contrasting with photographs of healthy well-nourished babies. Also displayed were garden produce, fruits, wild spinaches, amasi (sour milk) and dried milk powder.

A film was shown on the growing and use of vegetables. As this film collected crowds, talks were given on a balanced diet using local foodstuffs. Leaflets in English and vernacular on kwashiorkor and pellagra were also handed out.

So far the Unit has been well received, but it is still too early to measure the amount of impact. To achieve results it will be necessary for the Unit to visit an area again and again.

1.3. UNICEF still supplies the territory with approximately thirty tons of dried skim milk powder per year. This milk is distributed to the vulnerable groups, i.e. pregnant and nursing women, children under five years of age, and children suffering from malnutrition.

1.4. Cases diagnosed as malnutrition or "deficiency diseases" over the last ten years are as shown in the following table:-

1954	388	1959	2010
1955	330	1960	2196
1956	450	1961	2864
1957	1010	1962	3240
1958	1459	1963	2399

The 'breakdown' of cases of malnutrition during the last three years is as follows:-

	1961		1962		1963	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Total Cases of Malnutrition	2864	71	3240	101	2399	75
Kwashiorkor	487	24	685	35	463	32
Pellagra	938	6	912	4	603	4
Scurvy	13	-	14	-	43	5
Malnutrition unqualified	1426	41	1629	62	1290	34

CHAPTER I (Contd.)

(c) SANITATION - WATER SUPPLIES - FOOD SUPPLIES.

1. SEWAGE DISPOSAL.

1.1. Mbabane.

This well maintained sewage disposal plant continues to work very satisfactory. There are still a few houses which have the bucket conservancy system. As the disposal of the pails' contents had on occasions led to difficulties, a disposal plant connected to the main sewer was constructed during the year.

1.2. Manzini.

As reported last year, the trouble experienced in Manzini from the overflow of the conservancy tanks is still present in spite of the construction of a new sewage disposal plant. The principal cause of the trouble is due to the frequent breakdown of the one and only ancient vacuum tanker. It was expected that with the construction of the sewage disposal plant many of these conservancy tanks could be abolished, but unfortunately difficulty is being experienced by the local households in obtaining the services of a qualified artisan to make connections to the sewage system.

In the new sewage disposal plant the sewage after screening is passed into oxidation and maturation ponds without pre-treatment. If suitable land be available this method has been shown to be a cheap and effective method of sewage treatment.

1.3. In the smaller towns where pipe-borne water is available, the new houses have individual septic tanks. Unfortunately some of the older houses still rely on the bucket system.

1.4. In areas where it is possible to have communal latrines, the aqua privy types are preferred since the pit latrine has not been found satisfactory. The R.O.E.C. system where properly constructed continues to give satisfaction and is ideal on farms where a lack of constant supply of water prohibits the introduction of the septic tank system.

2. RURAL SANITATION.

No progress can be reported during the year. Sanitation in rural areas is, as stated last year, virtually non-existent. Owing to the absence of villages it means that communal latrines are useless and that each kraal would have to construct an individual latrine. With so much bush surrounding each kraal, the Swazi people have yet to be convinced of the need for a latrine.

It is not surprising that there has been a steady increase in the number of cases suffering from intestinal disease.

3. REFUSE REMOVAL.

In urban areas the local authority is responsible for refuse removal. These authorities have proper vehicles for the removal, but unfortunately pay little attention to the disposal of the refuse. The refuse is dumped on selected sites and very little attempt is made at controlled tipping.

/In one town...

In one town an effort was made to combat the fly menace from the dump by spraying with an insecticide. This practice had to be stopped because complaints were received that the insecticide may be dangerous to children scavenging on the dump. If scavenging on the dumps be allowed, then controlled tipping is impossible.

4. WATER SUPPLIES.

4.1. The Mbabane and Manzini water supplies are still excellent but the treatment and storage plants in both these towns will require augmentation in the near future due to the rapid extensions.

The supplies in the smaller towns are showing a steady improvement.

4.2. The following table shows the number and results of water samples submitted for bacteriological examination.

PLACE	DATE	COLLECTION POINT	PRESUMPTIVE E.COLI	FAECAL E.COLI
MBABANE	11.3.63	Raw Water	80	25
		School Pool	80	0
		Town Pool	0	0
		Tap Kent Rock Area	0	0
		Tap School	0	0
	18.6.63	Raw Water	13	13
		St. Marks School	0	0
		Sewage Effluent	380	13
		River above Sewage Works	80	9
	9.9.63	Raw Water River	25	0
		Raw Water Pumps	0	0
		River above Sewage Works	1800	1600
		Sewage Effluent	130	6
		Central Hotel	0	0
		St. Marks School	0	0
	2.12.63	Raw Water	130	17
		St. Marks Primary School	0	0
		Town Pool	0	0
		St. Marks Pool	0	0
WATERFORD SCHOOL	7.1.63	Water Pool	1800	35
		Stream	380	5
	18.6.63	Ordinary Water	2	0
		Drinking Water	0	0
	2.12.63	Ordinary Water	20	14
MANZINI	4.3.63	Raw Water	600	50
		Swimming Pool	35	0
		R.F.M. Hospital	0	0
		Sidney Williams School	0	0
	4.5.63	Old Scheme Raw Water	1600	900
		Old Scheme Filtrate	2	0
		Old Scheme Effluent	250	80

/ MANZINI (Contd.)

PLACE	DATE	COLLECTION POINT	PRESUMPTIVE E.COLI	FAECAL E.COLI
MANZINI	3.6.63	Sidney Williams School	0	0
		S.A.R. Depot	0	0
		Creamery	0	0
		Wood	0	0
		St. Michael's School	0	0
		Crystal Springs	0	0
	8.7.63	Teachers Training College	0	0
		Outlet Tap Reservoir	0	0
	2.9.63	Filter House	0	0
		Barlow's New Flats	0	0
	16.9.63	Usutwana River	600	25
		Matapha Filtrate	0	0
		Residence	0	0
		P.W.D. Office	0	0
		D.L.U. Surgery	0	0
		Stewarts & Lloyds	0	0
	8.10.63	Outside Dairy Farms:		
		Tubungu Raw Water	900	12
		Tubungu Treated Water	0	0
		Blue Hills Raw Water	250	0
		Blue Hills Treated Water	0	0
	4.11.63	Mpisi Raw Water	50	0
		Old Works Clear Water	2	2
		Old Works Tap of Filter	0	0
	18.11.63	Jordan Das Neves	0	0
		Arnold, T.T.C.	0	0
		Mocambique Restaurant	0	0
		W/W Office	0	0
		Electricity Depot	0	0
		Supervisor's Residence	0	0
MDUTSHANE	15.1.63	Experimental Farm Raw Water	1800	40
		Experimental Farm Workshop	0	0
	13.5.63	Raw Water	600	25
		Laboratory Tap	600	80
	22.7.63	Garage	0	0
PIGGS PEAK	18.3.63	Raw Water No. 1.	380	250
		Bank	0	0
		Raw Water No. 2.	900	45
		Hotel	0	0
	13.5.63	Raw Water No. 1.	35	17
		Hotel	0	0
		Raw Water No. 2.	140	140
		Bank	5	0
	29.7.63	Raw Water No. 1.	25	0
		Hotel	0	0
		Raw Water No. 2.	35	8
		Hospital	0	0
HLATIKULU	13.2.63	Raw Water	250	25
	14.2.63	Catchment Area	1600	600
		Reservoir	170	5

/HLATIKULU (Contd)

PLACE	DATE	COLLECTION POINT	PRESUMPTIVE E.COLI	FAECAL E.COLI
HLATIKULU	15.2.63	Reservoir	0	0
		Hlati Inn	380	35
	1.4.63	Raw Water	250	130
		Hospital	5	5
		M.O. Residence	0	0
	30.4.63	Hospital	50	0
		Hotel	8	0
	15.7.63	Raw Water	50	0
		Rising Main	5	0
		P.W.D. Yard	25	0
		Hospital	30	1
	12.8.63	Raw Water	50	4
		Hospital	35	11
		Church	70	8
	20.8.63	Raw Water	35	35
		Hospital	0	0
	14.10.63	Raw Water	1800	20
		Hotel	11	2
		Hospital	110	2
	25.11.63	Hotel	50	0
		Hospital	0	0
GOEDGEGUN				
	1.4.63	Raw Water	13	2
		Dowlings	0	0
		School	0	0
	12.8.63	Market	0	0
		Hluti Raw Water	1600	14
		Hluti Police Station	7	4
	20.8.63	Raw Water	25	0
		Market	0	0
		Hluti Raw Water	25	5
		Hluti Police Post	0	0
	14.10.63	Raw Water	14	7
		Treated Water	80	25
		Swimming Bath	0	0
	25.11.63	P.W.D. Yard	0	0
		E.B. School	0	0
		E.B. School Swimming Pool	0	0
MANKAIANA				
	15.1.63	Raw Water	900	900
		Shop	2	0
		Residency Pool	0	0
		Swimming Bath	0	0
	30.4.63	Raw Water	110	0
		Stand Pipe	0	0
	15.7.63	Raw Water	170	0
		Stand pipe	0	0
	25.11.63	Stand Pipe	0	0

/STEGI ....

PLACE	DATE	COLLECTION POINT	PRESUMPTIVE E.COLI	FAECAL E.COLI
STEGI	18.2.63	Police Compound Tap	20	8
		Stegi School	45	0
		Stegi Club	2	0
	22.4.63	Raw Water	1600	1600
		W/W Tap	8	0
		Residence	17	2
		Swazi Market	30	0
		Primary School	5	0
		Residence	7	0
	4.5.63	Charge Office Tap	8	0
		Gaol	25	0
		Bamboo Inn	25	0
	8.7.63	Residence	25	0
		Bamboo Inn	8	0
		P.W.D.	0	0
		Stegi Motors	13	0
	2.9.63	Butchery	2	0
		Charge Office	0	0
		Market	5	0
		Schumyn's Garage	0	0
	4.11.63	Clear Water	0	0
		Clear Water	0	0
BORDER GATE & MHLUME	25.3.63	Komati River	1600	600
		Police Office	130	13
		Post Office	0	0
		Government School	0	0
		Government School (filtered)	0	0
		Butchery	0	0
LOWVELD	27.5.63	Lubuli Clear Water	35	0
		Lowveld Settled Water	130	5
		Lowveld Clear Water	0	0
		Bend Inn	140	13
	25.6.63	Raw Water	170	11
		Mill Laboratory	0	0
		Clinic	0	0
		Bend Inn	250	20
		Unbongweni Waterhole	380	35
		Lubuli Road Camp	13	0
	26.8.63	Settled Water	2	0
		Clear Water	0	0
		Lubuli Road Camp	2	0
		Bend Inn Clear Water	250	6
		Big Bend Clinic	0	0
	12.11.63	Bend Inn	0	0
		Compound Well	1800	4
		Big Bend Clinic	0	0
		Lowveld Farm	70	0
		Lubuli Road Camp	0	0

/Mhlambanyati & Bunya...

PLACE	DATE	COLLECTION POINT	PRESUMPTIVE E.COLI	FAECAL E.COLI
MHLAMBANYATI & BUNYA	30.4.63	Stand Pipe	0	0
		Garage	0	0
	22.7.63	Garage	0	0
		Transport Depot	0	0

A total of 199 water samples were examined from all sources for the year.

5. FOOD IN RELATION TO DISEASE.

5.1. Trade Premises.

All food-handling trade premises were inspected at least once during the year, particular attention being paid to those in the rural areas. Reports of these inspections are sent to the local authorities so that action may be taken when renewal of these licences is sought.

During the year, 65 samples of milk were taken for bacteriological examination. So far only warnings have been issued to those whose milk has contravened the Urban Areas Regulations.

Unsound foodstuffs are seized and destroyed, the principal items being canned meats, fish and vegetables, as well as "fresh" meat and sausages.

5.2. Abattoirs.

5.2.1. Only at Manzini and Mbabane are the abattoirs controlled by the Health Inspectorate staff. The staffing position does not permit more than infrequent inspections at the other abattoirs. In these abattoirs the meat is inspected by the abattoir attendant, but the quality of these inspections leaves much to be desired.

5.2.2. In July the Mbabane abattoir was closed for daily slaughter. The Manzini abattoir now supplies meat to Mbabane. Meetings were held during the year to decide fate of the Manzini and Mbabane abattoirs, but so far no definite conclusion has been reached.

5.2.3. The following table shows the number of animals slaughtered at the Manzini and Mbabane abattoirs and also the number of carcasses either frozen, cooked or condemned for measles.

ABATTOIR	NO. CARC. EXAMINED			NO. CARC. FROZEN			NO. CARC. COOKED			NO. CARC. DESTROYED			INCID. OF C. BOVIS	INCID. OF C. CELL
	B	P	S	B	P	S	B	P	S	B	P	S		
MANZINI	4573	990	1585	143	14	-	1	5	-	34	34	-	3.75%	3.6%
MBABANE	911	333	510	-	-	-	-	-	-	4	13	-	-	-

B = Bovines P = Pigs S = Sheep

5.2.4. Portions of Carcasses Condemned at Manzini Abattoir.

Bovine

Livers	(Flukes)	=	185
	(Abscess)	=	10
Lung	(Abscess)	=	6
	(Echinococcus)	=	3
Tongue	(Measles)	=	7
Heads	(Measles)	=	3
Hearts	(Measles)	=	3
Shins	(Bruising)	=	11

/Sheep.....

Sheep

Livers	(Stilesia)	=	188
	(Abscess)	=	7
Lungs	(Abscess)	=	15

Pig

Liver	(Abscess)	=	2

Conditions Warranting Condemnation of Whole Carcasses.

Extensive bruising with gangrene	=	2 bovine
Pleurisy and Peritonitis	=	2 "
Fevered	=	2 "
Jaundice	=	3 "
Sarcocysts	=	1
" "	=	2 pigs
Measles	=	24 bovine
"	=	30 pigs

The Manzini abattoir has not been appreciably improved during the year though there has been an approximate increase of 50% in the number of animals slaughtered. The installation of an electric saw and additional stand pipes has accelerated the dressing and cleaning of the carcasses. But far from satisfactory is the space provided for slaughtering and dressing, the dilapidated Barber traps, and the disposal of the waste water.

5.3. Butcheries.

In the Urban Areas, butcheries are regularly inspected by the Health Inspectors. In the rural area there have been more frequent inspections and attempts were made to bring these butcheries up to the level required by the Urban Areas Regulations. Since these butcheries are required to renew their trading licences annually they endeavour to carry out the recommendations suggested in the Health Inspector's report to the Licencing Authority.

5.4. Milk Supplies.

Although the Urban Areas Regulations 1962 make it compulsory for a milk vendor to be in possession of a permit to sell milk in an Urban Area, in Mbabane only one supplier out of six has so far obtained a permit.

The Urban Areas Regulations 1962 only apply to Urban Areas and since the majority of milk producers have their cowsheds outside the Urban Areas, control over the production of milk is very unsatisfactory.

Frequent bacteriological examinations were carried out during the year.

The Local Authorities have been requested to take strict measures against those vendors who contravene the Urban Areas Regulations.

6. Housing.

During the year regulations known as The Employment (Care and Welfare) Regulations were introduced to regulate the construction of permanent and temporary housing for labour on plantations, industrial undertakings, irrigation schemes, etc. These regulations will greatly improve the standard of housing in these undertakings and should lead to better relations between employer and employee.

/Parasitology...

7. Parasitology.

7.1. Tape Worm Treatment.

The treatment of people suffering from tape worm infestation has been continued throughout the year by the Manzini Health Office Field Staff.

Few farmers have requested tablets and one wonders if the enthusiasm for the treatment is waning or whether their employees have been cleared of their parasites.

The number of persons treated was 3,982 compared with 5,705 last year.

7.2. Bed Bugs.

The bed bug has continued to be even a greater nuisance than it was last year. Requests for assistance in eradication have been received daily.

The Carbamate insecticide is still showing success and no resistance by the bed bug to this insecticide has yet been observed.

7.3. Cutaneous Myiasis.

Although the fly Cordylobia anthropophaga is still very prevalent, very few cases of cutaneous myiasis were reported.

8. Health Propaganda and Lectures.

With the formation of the Health Education/Nutrition Unit more attention has been paid to Health Propaganda than was reported last year. An account of the work of this unit is given in para. 1.2 under "Nutritional and Deficiency Diseases."

Following a visit by Miss L. Martin, Regional Adviser in Health Education, W.H.O. African Region, it has been decided to concentrate more on instructing teachers-in-training, Nurses in charge of clinics, Home Domestic Demonstrators, etc. These persons live in intimate contact with the people and it is considered that, if they be properly instructed, then they would make a greater impact on the local inhabitants than the unit with its infrequent visits.

SCHEDULE OF INSPECTION CARRIED OUT DURING THE YEAR 1963.

	Pigg's Peak	Mbabane	Mankaiana	Manzini	Stegi	Hlatikulu	Goedegun	Golela	Rural	Total
Townships	2	10		16		3	1		5	38
Abattoir	3	69	7	138	3	2	7	4	1	244
Bakeries		32		31	5		9	3		80
Butcheries	6	36	24	68	10	7	9	11	142	323
Brickfields				2						2
Building Sites		16	2	8			2		10	38
Eating Houses				11	8			1	1	21
Complaints		32	2	70		1	1		10	116
Courts Attendances		6								6
Clinics		8	2						11	21
Clubs	1	6		8	1	1	1		7	25
Camp Sites				1						1
Compounds	5	5		10	2	1			8	31
Dairies	2	12		12					25	51
Drainage	2	4	2	73	1	1			2	85
Eating Houses	7	52	11	6	2	1		3	31	113
Factories				14			3			17
Flats		10		19						29
Foodstuffs (Condemnation)		7	2	44	4	1			7	65
Fumigation				1		1				2
Gaols	3	52	7	7	1	5	5	2	2	84
General Dealers	14	76	33	65	13	10	8	6	114	339
Hairdressers				5						5
Hide Stores		10		3	2		1			16
Hospitals	1	4	1	13	3	10			1	33
Hostels							1			1
House Inspections	1	18	8	49	3	1	1			81
Hotels				37	6	10	9	4	6	72
Interviews	1	12	3	78	3	6	1		52	156
Licence Applications	2	29	1	12	1	2	6	1	25	79
Markets	6	51	3	35	3	7	6		3	120
Meetings		2		2						4
Milk Samples		14		43					8	65
Milkshops		2		2						4
Night Soil Disposal		3	3	8			3	3	1	21
Outbuildings	7	1		4		1	1			14
Offices		2		3		1	1		1	8
									Carried forward	2410

	Pigg's Peak	Mbabane	Mankaiana	Manzini	Stegi	Matikula	Goedgegun	Collel	Rural	Total
Carried forward										2410
Plans		47		40	1		1			89
Pit Latrines	6	4	6	6	5			13	27	67
Pail Closets	7	33	11	50	7	8				117
Public Conveniences	7	44	9	27	4	8	9		6	114
Refuse (bins)		23		51	3		4		3	84
Refuse Disposal	6	8	7	28						49
Restaurants	6	54		65	4	3	3	1	9	145
Servants Quarters	2	13	1	20			1	2	1	40
Schools		9	3	4		6	4		36	62
Septic Tanks	1	7		26			2			36
Temporary latrines		6		18						24
Vacant Stands		16		26			6			48
Water Samples		4		4					1	9
									Total	3294

CHAPTER II

HOSPITALS AND CLINICS.

1. GOVERNMENT AND SUBSIDISED MISSION HOSPITALS AND CLINICS.

During 1963 new Government clinics were built at Mhlangatane in the Pigg's Peak district and at Nkaba in the Mbabane district. Both these areas were previously without medical facilities.

Certain extensions at Mbabane Hospital were completed in July, namely a 10-bedded prefabricated extension to the private wards, a 12-bedded isolation block, a 50-bedded general ward, and an extension to the Nurses Home. These extensions are stop-gap measures to carry the hospital over until the planned reconstruction can be carried out. As yet it has not been possible to open these extensions as the Nurses Home and general ward were requisitioned as Army accommodation as soon as they were completed, at the time of the emergency in July, and are still being used as such, whilst the other extensions have had to be used as storage space for hospital equipment.

All new building was financed by C.D.& W. funds.

In June revised medical service charges were brought into force, and for the first time a small maintenance charge was made for general ward accommodation, while an outpatient fee was charged for subsequent as well as for first attendances. As a result of this attendances fell at most Government hospitals, but by the end of the year had recovered almost to the previous level. The Government Notice setting out the revised charges is reproduced in the Appendix. Over the year as a whole figures for Government hospitals fell slightly, whilst figures for Government clinics rose.

At the Raleigh Fitkin Memorial Hospital (Nazarene Mission) a new Nurses Home and an extension to the private wards were opened in March. The cost of these extensions have been met in part by C.D.& W. funds.

During 1963 attendances at Mission hospitals and clinics showed an increase on those of the previous year.

The tables that follow give particulars of the work done at Government hospitals and clinics and subsidised Mission hospitals, and the majority of Mission clinics that are subsidised.

Figures are not available for the following subsidised Mission clinics - St. Mary's Mission, Lobamba; Entondwane (Baxter's Farm); and the clinic at Our Lady of Sorrows School, Hluti. Nor are figures given for St. Juliana's Clinic in the Manzini district, or for St. Theresa's Clinic in Manzini (which is in fact a 40-bedded hospital), neither of which are subsidised.

The detailed nosological returns will be found in the Appendix.

/GOVERNMENT HOSPITALS - 1963.

GOVERNMENT HOSPITALS - 1963.

	Mbabane	Hlati-kulu	Man-kaiana	Pigg's Peak	Total
Hospital Staff					
Medical Officers	5	3	-	1	9
Matron	1	1	-	-	2
Nursing Sisters	6	3	1	-	10
Pharmacist/Storekeeper	1	1	-	-	2
Radiographers	1	-	-	-	1
Housekeeper	1	-	-	-	1
Medical Assistant	-	1	-	-	1
Laboratory Assistant	2	1	-	-	3
Dispensers	3	1	-	-	4
Pupil Dispensers	-	2	-	-	2
Nurses	32	28	6	9	75
Outpatient Attendants	3	-	1	-	4
Ambulance Drivers	2	2	1	1	6
Ward Attendants and Orderlies	15	12	2	3	32
BEDS.					
(a) Private Wards	8	8	-	-	16
(b) General Wards	143	127	28	39	337
ADMISSIONS.					
(a) Private Wards	352	120	-	-	472
(b) General Wards	3548	2734	775	1061	8118
DAILY AVERAGE NO. OF IN-PATIENTS					
(a) Private Wards	4.9	1.4	-	-	6.3
(b) General Wards	197.5	168.2	28.6	43.3	437.7
DEATHS.	134	141	14	73	362
OPERATIONS.					
(a) Major	465	65	-	27	557
(b) Minor	894	352	-	67	1313
X-RAY.					
(a) Examinations	3944	1732	-	339	6015
(b) Screenings	168	10	-	-	178
OUT-PATIENTS.					
(a) First Attendances					
(i) in Private Ward section of hospital	4814	1028	-	178	6020
(ii) in General Ward section of hospital	18331	10335	3190	8443	40299
(b) Subsequent Attendances					
(i) in Private Ward section of hospital	5670	957	-	168	6795
(ii) in General Ward section of hospital	13783	20728	321	2118	36950
GRAND TOTAL	42598	33048	3511	10907	90064

/GOVERNMENT CLINICS - 1963

GOVERNMENT CLINICS - 1963.

	First Attendances	Subsequent Attendances	Total Attendances	Districts Totals
MBABANE DISTRICT				
Government Farm Clinic	7704	2300	10004	10004
HLATIKULU DISTRICT				
Goedgegun	11658	13346	25004	
Hluti	6225	4359	10584	
Mhlotsheni	3188	1784	4972	
Sipofaneni	4842	3203	8045	
Vimy Ridge (Gollel)	759	258	1017	
Lubuli*	3856	1020	4876	
St. Phillips Mission**	3524	429	3953	
New Haven Mission**	7069	2513	9582	68033
MANKAIANA DISTRICT				
Mahlangatsha	3373	1197	4570	
Dwalile	2031	1466	3497	8067
PIGG'S PEAK DISTRICT				
Horo	9278	4025	13303	
Lesters*	2239	833	3072	
Mhlangatane (March-Dec)	3443	1018	4461	
Nkaba (Nov & Dec)	268	88	356	21192
STEGI DISTRICT				
Nomahasha*	742	340	1082	1082
TOTAL GOVERNMENT CLINIC ATTENDANCES				108379

* = Clinics controlled by Swazi National Treasury - but visited and supervised by Government Medical Officers.

** = Mission Clinics visited and supervised by Government Medical Officers.

/MISSION HOSPITALS - 1963.

MISSION HOSPITALS - 1963.

	Raleigh Fitkin Memorial Hospital	Good Shepherd Hospital	Mahamba Methodist Hospital	TOTALS
BEDS.				
(a) Private Wards	15	5	-	20
(b) General Wards	216	30	45	291
ADMISSIONS.				
(a) Private Wards	410	57	-	467
(b) General Wards	6149	878	609	7636
DAILY AVERAGE NO. OF IN-PATIENTS.				
(a) Private Wards	6.67	0.85	-	7.53
(b) General Wards	298.72	33.67	25.86	358.25
DEATHS.	217	43	39	299
OPERATIONS.				
(a) Major	444	12	36	492
(b) Minor	1192	136	104	1432
X-RAY.				
Examinations	3771	456	14	4241
Screenings	7	6	222	235
OUT-PATIENTS.				
(a) First Attendances				
(i) in Private Ward section of hospital	3635	778	79	4492
(ii) in General Ward section of hospital	17326	4959	3289	25574
(b) Subsequent Attendances				
(i) in Private Ward section of hospital	1592	390	58	2040
(ii) in General Ward section of hospital	10329	1795	4356	16480
GRAND TOTALS	32882	7922	7782	48586

/MISSION CLINICS - 1963.

MISSION CLINICS - 1963.

	First Attendances	Subsequent Attendances	Total	Mission Total
NAZARENE MISSION				
Stegi	5171	3127	8298	
Endingeni	4294	1850	6144	
Pigg's Peak	1920	654	2574	
Mliba	951	2101	3052	
Mafuteni	451	733	1184	
Bhekinkosi	651	1404	2055	
Balegane	811	1344	2155	
Ebenezer	821	831	1652	
Malinda	1124	851	1975	
Mayiwane	1340	5607	6947	
Tambankulu	2959	5249	7208	
Malandela	324	317	641	
Lalela	1130	740	1870	
Tembelikle	686	369	1055	
Manzana	126	200	326	
				47136
METHODIST MISSION				
Gege	2607	1744	4351	
Edwaleni and Mkondo	2840	2063	4903	
Big Bend	2164	668	2832	
				12086
TOTAL MISSION CLINIC ATTENDANCES				59222

The medical examinations of school children (totalling 3103) are not included in the Methodist Mission Clinic figures as they were in 1962, but are dealt with separately at the end of this chapter.

/HAVELOCK MINE HOSPITAL...

3. HAVELOCK MINE HOSPITAL.

The number of Africans who were not mine employees or their dependants who were treated at Havelock Mine Hospital during 1963 was as follows:-

Number of admissions	238
Number of out-patients (new cases)	582
Number of out-patients (re-attendances)	543
Daily number of in-patients	4.2

4. MEDICO-LEGAL POSTMORTEM EXAMINATIONS.

The number of medico-legal postmortem examinations carried out at the various Government and subsidised Mission hospitals in 1963 was as follows:-

Mbabane Hospital	41
Hlatikulu Hospital	44
Pigg's Peak Hospital	16
Raleigh Fitkin Memorial Hospital	69
Good Shepherd Hospital	14

5. MEDICAL EXAMINATION OF SCHOOL CHILDREN.

Medical examination of the school children in the Methodist Mission schools in Southern Swaziland was again carried out by the Medical Superintendent of Mahamba Hospital, for the third year in succession.

In addition to heights and weights, complete physical examinations and eye-testing (this latter from Standard 2 upwards), all pupils clinically anaemic had a haemoglobin estimation done, and those reporting for treatment also had a blood smear examined. In addition every pupil examined had a Mantoux Test carried out, using a Heaf gun and P.P.D. The gun was set for 2 mm. penetration for all tests, and the reactions were read after a week. Finally all pupils received one injection of T.A.B. vaccine, and 90% received the second T.A.B. injection.

The following are the figures in outline:-

Boys Examined	1545	-	Unhealthy	41%
Girls Examined	1558	-	Unhealthy	53%
Total Examined	3103	-	Unhealthy	47%

Schools visited - 14.

The percentage of children with defects found was 43.5 in 1962.

Mantoux Tests:

No. performed 3009 - Positive 45.5%

Age of pupils ranged from 6 to 18 years.

/Incidence of Disease...

Incidence of Disease.

In order of prevalence this was much as in previous years, with anaemia at the head of the list. With regard to anaemia, average haemoglobin was 65%. Smears showed that 55% of the anaemias were hypochromic in type, 40% were normocytic and normochromic, and the rest were dimorphic/macrocytic.

It would appear therefore that iron deficiency is the important etiological factor. Over 90% of those treated for anaemia did in fact respond to an iron mixture and Vitamin C, with check haemoglobin estimations of between 90% and 100%.

CHAPTER III

MATERNITY AND CHILD WELFARE SERVICES.

Ante-natal clinics are held at all Government and Mission Hospitals, and at most of the outlying clinics. In previous years, it was necessary to encourage Swazi women to come into hospital for their confinements, but the maternity wards are now so popular that overcrowding may in the future necessitate restricting admissions to primiparous women and others in whom difficulty is expected.

The number of ante-natal examinations and confinements carried out during the past 4 years has been as follows:-

	Antenatal Examinations				Confinements			
	1960	1961	1962	1963	1960	1961	1962	1963
Mbabane Hospital	1704	2130	2311	2189	611	705	802	691
Hlatikulu Hospital	1315	1298	1596	844	375	409	528	339
Mankaiana Hospital	1798	983	535	185	171	188	180	135
Piggs Peak Hospital	807	930	1087	1165	168	221	241	280
Raleigh Fitkin Mem.Hospital & Clinics	5722	4996	3049	3720	1276	979	574	919
Good Shepherd Hospital	791	972	917	1251	132	139	161	155
Mahamba Methodist Hospital	550	192	571	546	84	79	74	100

Child Welfare clinics have continued at the Nazarene Mission health centres and also at the Government clinics at Sipofaneni and Hluti and Hlatikulu Government Hospital where the following attendances were recorded -

Sipofaneni	971
Hluti	1,912
Hlatikulu Hospital	140

CHAPTER IV

TRAINING OF NURSES.

Nurses are trained at the well-equipped Ainsworth Dickson Nursing College, attached to the Raleigh Fitkin Memorial Hospital at Manzini, for the High Commission Territories Nursing Council certificates in General Nursing and Midwifery, the syllabuses of which are based on those of the South African Nursing Council. In the past training was also offered for the Swaziland Executive Nursing Committee certificates in General Nursing and Midwifery, which are of a lower standard and for which the educational requirement is only Standard VI. As a sufficient number of candidates with the higher educational standard required by the High Commission Territories Nursing Council (viz. Junior Certificate) are now coming forward, candidates for training for the Swaziland Executive Nursing Committee certificates are no longer accepted, although the training of those who have already started this course, of course, continues.

The results of the examinations held during the year were as follows:-

	MAY		NOVEMBER	
	Passed	Failed	Passed	Failed
HIGH COMMISSION TERRITORIES NURSING COUNCIL.				
Preliminary Examination for General Nurses	3	1	12	10
Final Examination for General Nurses	-	2	8	4
Midwifery (Part I)	3	-	-	-
Midwifery (Part II)	-	-	6	-
SWAZILAND EXECUTIVE NURSING COMMITTEE.				
Final Examination for General Nurses	1	-	5	-
Midwifery Examination	-	-	3	-

The number of nurses in training under the High Commission Territories Nursing Council regulations at the end of December 1963 was:

Student Nurses	1st year	22
	2nd year	19
	3rd year	16
	4th year	14
Pupil Midwives		10
		81

In addition, three student nurses and four pupil midwives were completing their training under the Swaziland Executive Nursing Committee regulations.

CHAPTER V

LABORATORY SERVICES.

The Pathology Laboratory in Mbabane continues to function satisfactorily - and to fulfil a very useful purpose in dealing with serology, cultures, sensitivity tests and blood chemistry on a territorial basis.

Histological examinations and certain other investigations continue to be carried out at the South African Institute for Medical Research in Johannesburg, whilst the small laboratories at Mbabane Hospital, Hlatikulu Hospital, Raleigh Fitkin Memorial Hospital, Good Shepherd Hospital and Mahamba Hospital continue to deal with the less complicated laboratory work.

The routine examination of blood slides for malaria parasites and of urines and stools for bilharzia ova, are carried out at the Health Office at Manzini, and the results of these examinations are reported under the sections dealing with malaria and bilharzia, and are not included in the figures which follow:-

(a) PATHOLOGY LABORATORY, MBABANE.

TEST	1962	1963
Blood Culture	211	308
Widal (TMX)	898	864
Paul Bunnell Test	-	13
Vi Test	14	85
Stool Culture	52	147
Stool Parasitology	59	19
Urine complete	42	31
Urine Chemistry	-	12
Urine Culture	-	90
Urine Bilharzia	47	49
T.B. direct	203	74
T.B. culture	36	30
Blood Sugar	47	54
Blood Urea	23	94
Serum Protein	6	42
Serum Bilirubin	8	23
Blood Cholestrol	3	8
Blood Amylase	2	4
Serum Calcium	3	9
Serum Phosphatase	1	7
C.S. Fluid	21	48
Malarial Slides	3	2
Culture	131	244
Sensitivity Tests	129	288
Blood Grouping	14	6
Blood Count	55	27
E.S.R.	3	6
Slides for Microscopy	6	6
Diphtheria	26	108
Water Analysis	160	181
Milk Analysis	14	80
V.D.R.L. Test	6288	8515
TOTAL	8506	11474

/Hospital Laboratories

(b) HOSPITAL LABORATORIES.

	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital	Good Shepherd Hospital	Mahamba Hospital
Urine Examinations (including microscopy)	7327	2150	19044	130	236
Stool Examinations	1581	721	235	4	269
Sputum Examinations	3082	580	830	6	80
Other Bacteriological Smears	6373	164	558	12	71
Full Blood Counts	547	-	678	10	39
Red Cell Counts	96	83	-	21	-
White Cell Counts	138	252	13	36	3
E.S.R.	1759	156	952	20	-
Haemoglobin Estimations	-	192	-	-	-
Blood Films for Parasitology	-	47	-	-	-
Other Examinations	21	12	549	-	1100

CHAPTER VI - VITAL STATISTICS

As the African section of the population is at present exempted from the provisions of the Registration of Births, Marriages and Deaths Proclamation, the only figures that are available refer to less than 5% of the population, and are consequently of very limited value, and will not be quoted in the report in future.

CHAPTER VII - PRISONS

Regular medical inspections of the prisons at Mbabane, Hlatikulu, Manzini and Stegi have been carried out, and in spite of overcrowding and antiquated buildings, sanitary conditions and the health of the prisoners have been satisfactory on the whole.

Mentally disordered patients in need of care and supervision are cared for in the prisons - the majority being housed in Mbabane Gaol. This is a most unsatisfactory state of affairs - and a mental hospital in Swaziland is urgently required.

CHAPTER VIII - LEGISLATION

Legislation affecting the Medical Department enacted during 1963 was:-

Workmen's Compensation Proclamation 1963.

Government Hospital Charges (Government Notice No. 33 of 1963).

International Certificate of Vaccination against Smallpox (Government Notice No. 69 of 1963).

CHAPTER IX - FINANCE.

The financial statement of the Department for the period 1st April 1962 to 31st March 1963 is as follows:-

REVENUE	R	R
Hospital, Health Centre and other fees		19,316
EXPENDITURE		
Personal Emoluments	195,369	
Travelling Expenses	7,451	
Operation & Maintenance of Vehicles	3,857	
Other Transport Charges	9,929	
Allowances & Fees - Medical	8,487	
Maintenance of Patients	62,529	
Maintenance of Mental Patients	7,326	
Lighting and Heating	5,705	
Hospital Equipment	7,793	
Upkeep of Grounds	156	
Anti-Malaria Measures	4,889	
Bilharzia Control	493	
Laboratory Services	2,187	
Public Health Measures	147	
Grants to Missions	41,179	
High Commission Territories Nursing Council	313	
		357,810
C.D.W. SCHEMES EXPENDITURE		
D.5002 Extensions to Piggs Peak Hospital	19,278	
D.4912 Extensions to Medical Services	41,926	
D.4913 T.B. Control	9,687	
D.4453 Construction of Clinics	4,292	
D.5136 Extensions to Mbabane Hospital	47,562	
		122,745
Total Expenditure on Medical & Sanitary Services		R480,555
Total Revenue of Territory (Excluding Grant in Aid from U.K.)		R4,049,724
The relationship of Medical Expenditure (territorial) to total revenue of Territory		8.83%

CONCLUSION.

I wish to express my sincere appreciation of the loyal and efficient manner in which members of the Department carried out their duties during the year, often under extremely difficult conditions.

B. D. WHITWORTH

DIRECTOR OF MEDICAL SERVICES.

APPENDIX I.

MEDICAL DEPARTMENT STAFFING (AS AT 31.12.63)

(a) DIVISION I AND II.	Name	Station
Director of Medical Services	Dr. B.D. Whitworth	Mbabane
Consulting Surgeon	Dr. H.H. Hamlin	
Consulting Ophthalmic Surgeon	Dr. G. Frampton	
Medical Officers of Health	Dr. R.D. Gauldie	Manzini
	Dr. H.C. Armstrong	Mbabane
Medical Officers	Dr. J.F. Alexander	Mbabane
	Dr. F. Friedman	Mbabane
	Dr. J.M.L. Klopper	Hlatikulu
	Dr. S.P.N. Shongwe	Hlatikulu
	Dr. D.W.C. Wagner	Pigg's Peak
	Dr. N. Wood	Goedgegun
	Dr. I.G. Tait	Mbabane
	Dr. J.P. O'Connor	Mbabane
	Dr. Y. Kaplan	Hlatikulu
	Dr. W.J. Downing	Mbabane
	Dr. S. Riba	Hlatikulu
Pharmacist/Storekeepers	Mr. J.L. van der Vyver	Hlatikulu
	Mr. G.R. Gibbon	Mbabane
Higher Executive Officer	Mr. J.H. Thomas	Mbabane
Matrons	Miss E.M. Bailey	Mbabane
	Miss J.A. Wilson	Hlatikulu
Accountant	Mr. F.R. Phillips	Mbabane
Nursing Sisters	Miss D.E. Burns	Mbabane
	Mrs. P.T. Mdiniso	Mbabane
	Mrs. A.C.T. Mabuza	Hlatikulu
	Mrs. A.L. Ogden	Mankaiana
	Miss J. Renzema	Mbabane
	Mrs. S. Dowling	Goedgegun
	Mrs. N.N. Dludlu	Mbabane
	Mrs. V.W.S. Mabuza	Hlatikulu
	Mrs. J. Spencer	Mbabane
	Mrs. M.T.Z. Masipa	Mbabane
	Mrs. G.T. Abrahams	Hlatikulu
	Mrs. D.M. Bhengu	Mbabane
Radiographer	Miss R.J. O'Shea	Mbabane
Laboratory Technician	Mrs. M.E. Gibbon	Mbabane
Health Inspectors	Mr. G.J. van Eeden	Manzini
	Mr. D.M. Eckard	Manzini
	Mr. C.D. Nxumalo	Manzini
	Mr. L. Mtetwa	Mbabane
Medical Assistant	Mr. A.F.K. Phiri	Hlatikulu
Housekeeper	Mrs. M. McCall	Mbabane
Stenographers	Mrs. D.M.C. Lane	Mbabane
	Miss B. Irvine (Personal Assistant seconded ex Secretariat)	Mbabane
Accounts Assistant	Mr. J.C. Mapumulo	

/Smear Examiner

(a) DIVISION I AND II.

	Name	Station
Smear Examiner	Mr. P.M. Matthews	Manzini
Field Officer (Health Education)	Mr. E.N. Dludlu	Mbabane
Handyman	Mr. W.Q. Mordaunt	Hlatikulu

(b) DIVISION III.

5 Dispensers
2 Pupil Dispensers
6 Laboratory Assistants
2 X-Ray Assistants
12 Clerks
102 Nurses
1 Nurse/Radiographer
4 Out-patient Attendants
15 Ambulance and Truck Drivers
1 Senior Malaria Assistant
10 Malaria Assistants
2 Bilharzia Field Assistants
1 Vaccinator
6 Dispensary Orderlies
7 Ward Attendants
2 Senior Orderlies
30 Orderlies
15 Nurse Aides
3 Wardmaids
14 Laundresses
2 Seamstresses
2 Office Messengers
3 Night Watchmen
5 Groundsmen
5 Cooks
3 Assistant Cooks
6 Housemaids
20 Health Visitors

APPOINTMENTS, PROMOTIONS, RESIGNATIONS, RETIREMENTS IN DIVISION I AND II DURING 1963.

APPOINTMENTS

Mrs. M.T.Z. Masipa	Nursing Sister	1. 1.63
Mr. E.N. Dludlu	Field Officer (Health)	2. 1.63
Mr. W.Q. Mordaunt	Handyman	1. 4.63
Dr. I.G. Tait	Medical Officer	19. 4.63
Dr. H.C. Armstrong	Medical Officer of Health	2. 5.63
Dr. J.P. O'Connor	Medical Officer	22. 8.63
Dr. Y. Kaplan	Medical Officer	1.10.63
Dr. W.J. Downing	Medical Officer	1.10.63

PROMOTIONS

Mrs. G.T. Abrahams	Nursing Sister	20. 9.63
Mrs. D.M. Bhengu	Nursing Sister	20. 9.63

RETIREMENTS

Dr. L.E.D. Joubert	Medical Officer	19.12.63
Miss A. Martin	Nursing Sister	7. 4.63
Mr. E.S. Njenje	Medical Assistant	24. 5.63

COMPLETION OF CONTRACT

Dr. D.M. Macfadyen	Medical Officer	24. 5.63
Miss M. Dolman	Nursing Sister	31. 7.63
Miss W.A. Schakel	Nursing Sister	3.12.63

APPENDIX II.

ANNUAL REPORT OF THE MBULUZI LEPER COLONY FOR THE YEAR ENDING 31ST DECEMBER, 1963.

Staff

Dr. K.A. Stark	Medical Superintendent (non-resident)
Dr. David Hynd, C.B.E.	Medical Officer
Miss E. Cole, S.R.N., S.C.M. M.B.E.	Matron
Miss B. Mamba	Nurse
Mrs. Prisca Manana	School Teacher
2 Labourers	

State during past year

No. of patients, December,	1961	41
" " " "	1962	36
" " " "	1963	32

Additions to Population

	Males	Females	Total
Admissions	12	3	15
Re-admissions	5	2	7
	17	5	22
Losses in Population Deaths	1	-	1
Desertions	-	-	0
Discharges	14	10	24
	15	10	25

Origin of Patients Admitted

Manzini	0	0	0
Stegi	0	0	0
Mbabane	9	4	13
Mankaiana	3	1	4
Piggs Peak	4	0	4
Hlatikulu	1	0	1
	17	5	22

Duration of Disease before Admission

Duration	Admissions
0 - 1 yrs	10
1 - 2 "	4
2 - 3 "	3
3 - 4 "	-
4 - 5 "	5
	22

Classification on Admission

Type	Admissions
Lepromatous	10
Neural	12
	22

Average Age on Admission 41.5 years

/Proportion of...

Proportion of Children to Total Admissions:

One female child is included in the above admissions. She was born in the Leprosy Hospital, but is not suffering from leprosy. She is still there awaiting her mother's discharge. There were no other children admitted during the year.

Diseases treated:

Trophic ulcers	12
Pellagra	1
Lepra reaction	4
Deafness	2
Blindness	1
Burns	1
Conjunctivitis	4
Gangrene of digits	3
Alastrim (small-pox)	1
Diarrhoea	12
Lymphadenitis	3
Epilepsy	1
Tapeworms	3
Dental caries	6
Intestinal obstruction	1

Laboratory Report

	Skin - Positive	Skin - Negative
Lepromatous	17	10
Neural	-	24
Total	17	34

Financial

The running costs for the year ending December, 1963, were as follows:-

Costs		Income	
Food	1,213-11	Swaziland Government	R2,885-63
Cleaning & Hardware	42-24	Duty and Donations	8-36
Medicines	146-01		R2,893-99
Wages	1,648-75		
Fuel	145-59		
Repairs - Plant & Buildings	241-17		
Office Supplies	1-30		
Transport and Railage	149-15		
Hospital Fees (R.F.H. Hospital)	73-65		
Duty	24-85		
Leper Ambulance Expense	399-06		
Cow feed	115-68	Debit Balance	R1,306-77
	R4,200-76		R4,200-76

REMARKS:

Treatment specifically for Leprosy during the year consisted of oral treatment with Diaminodiphenylsulphone (Avlosulphone) tablets. Where this could not be tolerated, resort was had to the less toxic Dimethylaminodiphenyl-thiourea (Ciba 1906) tablets. In addition to the above, "Etisul" by inunction has been given to the lepromatous cases. All patients have been making steady progress toward recovery.

There is a tendency for cases to seek treatment earlier, so that the usual deformaties of advanced leprosy are avoided. A few necessitous "burnt-out" cases are retained for humanitarian reasons.

/Occupational

Occupational therapy has consisted of carding and spinning of mohair for Carol Stephens Weaving Factory, Piggs Peak, and agricultural and gardening work. A grant from the Oxford Committee for Famine Relief has made for the improvement of food and milk production and the possibility of goat-farming is being considered. This will be under the supervision of the Department of Agriculture.

The children of school-going age have all been discharged during the year, so that the school is in abeyance at present.

Monthly visits and the provision of comforts by the Mbabane Division of the Red Cross, informal visits by interested individuals, a drill display by the Gordon Highlanders, and a musical parade by the York and Lancaster Regiment were all much appreciated and helpful to the morale of the patients. The regular spiritual ministrations carried on by the Church of the Nazarene, together with occasional visits from ministers of other denominations have also played an important part in the therapy and rehabilitation of the patients.

It is recorded with much satisfaction that since the Leprosy Settlement was established 15 years ago, a total of 560 patients have been successfully treated and returned to their homes.

Assistance both in money and in kind has been received from the Swaziland Government, the Church of the Nazarene, the Mission to Lepers, the Mbabane Division of the Red Cross, and a number of individual donors.

KENNETH A. STARK

MEDICAL SUPERINTENDENT.

APPENDIX III

ANNUAL REPORT ON MALARIA

JULY 1962 - JUNE 1963.

1. CLIMATIC CONDITIONS.

The winter months of 1962 had been comparatively dry. On account of a very dry spring and delayed summer rains, it was necessary to postpone spraying control measures in the bushveld areas to the first week in December.

Generalised and local showers fell during December and this was followed by the normal pattern of dry conditions during January and February. Intermittent rains during March and April favoured mosquito breeding and A.gambiae breeding sites were established at various places.

For this reason and also because the B.H.C. insecticide used is said to have a residual duration of approximately eight weeks, it was necessary to re-spray most of the areas below 1,000 feet during February 1963.

The Meteorological Records from various bushveld stations are reflected in the following table.

/Meteorological Report...

METEOROLOGICAL REPORT:

MONTH		MAZINI ALTITUDE 2,000 ft.			STEGI ALTITUDE 2,200 ft.			BIG BEND ALTITUDE 500 ft.			MHLUME ALTITUDE 950 ft.			GOLLEL ALTITUDE 600 ft.		
		Rainfall in inch.	TEMP. Max.	Min.	Rainfall in inch.	TEMP. Max.	Min	Rainfall in inch.	TEMP. Max.	Min.	Rainfall in inch.	TEMP. Max.	Min.	Rainfall in inch.	TEMP Max.	Min.
JULY	1962	0.06	75.0	47.7	0.00	-	56.5	0.01	79.5	43.3	-	-	-	0.04	79.3	50.0
AUGUST	1962	1.63	79.5	52.9	3.17	-	59.7	1.63	82.9	52.0	-	-	-	1.77	81.1	55.8
SEPTEMBER	1962	1.18	82.4	55.6	0.37	-	62.2	0.59	87.5	58.5	0.00	-	-	0.53	86.2	59.5
OCTOBER	1962	2.19	84.9	62.4	-	-	-	1.12	88.16	61.7	2.51	-	-	1.99	88.0	66.0
NOVEMBER	1962	8.14	80.2	63.5	7.78	-	66.6	5.73	86.6	67.6	5.25	-	-	2.37	86.5	66.9
DECEMBER	1962	6.27	83.2	65.7	3.78	-	-	-	-	-	2.90	-	-	3.64	88.7	68.2
JANUARY	1963	5.26	81.7	65.1	3.64	-	66.9	1.17	87.4	68.5	3.60	-	-	0.43	88.7	68.2
FEBRUARY	1963	5.54	83.3	64.9	5.67	-	62.4	3.29	88.5	67.1	5.00	-	-	3.31	88.7	67.1
MARCH	1963	3.08	77.2	63.1	3.76	-	59.9	1.96	87.3	63.2	3.37	-	-	-	-	-
APRIL	1963	5.77	73.3	58.1	2.36	-	57.2	1.28	83.8	59.2	1.57	-	-	0.51	86.6	60.6
MAY	1963	0.81	75.4	50.7	0.73	72.3	54.1	0.00	81.1	48.7	0.77	-	-	0.33	81.1	53.1
JUNE	1963	3.43	69.2	48.7	3.74	66.6	50.9	3.41	85.8	50.2	3.33	-	-	0.99	74.7	51.3

2. POPULATION AND HUT COUNT.

At the annual staff meeting held at Manzini during the first week of August, problems raised by each individual were dealt with and the staff were enlightened on their duties during the malaria season 1962-1963.

Active surveillance in sprayed and unsprayed areas has been continued intensively. Seasonal work commenced with the usual civic-survey as part of the surveillance activities. The migration of the populace, new living quarters, immigrant influx etc., were recorded in each area.

A total number of 101,730 persons were counted in the malarious area.

Results of Survey.

TOTAL NO. OF KRAALS	HUTS	ADULTS	CHILDREN	INFANTS	TOTAL POPULATION
12,713	62,069	51,049	43,270	7,411	101,730

3. MALARIA CONTROL MEASURES.

(a) All routine chemo-prophylactic measures at the Irrigation Schemes had been discontinued thus enabling the staff to concentrate more intensively on case finding, immigrant labour and entomological observations.

All immigrants from neighbouring malarious areas were treated as potential positive malaria cases and were given a full course of treatment. A bloodsmear of each immigrant was examined and all positive malaria cases were followed up and re-examined each fortnight for about six weeks.

No sign of drug resistant parasites have yet been found. Treatment consists of Chloroquine Sulphate (Nivaquine) daily dosage of 600 mgm (base) for 3 days and 2 Daraprim tablets (pyrimethamine) on the first day only.

(b) Residual Spraying.

Benzine Hexachloride, 12% gamma isomer, wettable powder has been applied to the internal surfaces of living quarters, storerooms, kitchens and any other structures at each kraal where mosquitoes were likely to rest. The insecticide was applied at the rate of .2 gm/ sq.m.

Spraying apparatus consisted of "Myto-praktikus" knapsack sprayers and "Hudson Expert" pressure pumps recommended by the World Health Organization.

The cordon area, bordering Mozambique was treated in the same manner as during the previous season.

The first round of spraying commenced early in December and was completed in January.

The second application of B.H.C. was completed during February/March.

/In single-sprayed...

In single-sprayed areas (semi middleveld) treatment of huts was delayed until January/February 1963.

The total number of huts treated was as follows:

SWAZI AREAS	24,827
FARMS AND IRRIGATION SCHEMES	9,455
	34,282

ENTOMOLOGY:

Entomological surveys were conducted in order to assess any behaviouristic changes which may have occurred during the season.

A certain number of houses were space sprayed with a knock-down insecticide (pyrethrum) in order to establish likely changes in A.gambiae behaviour such as the entering, feeding and resting in huts. This measure is also an indirect indication of likely resistance to B.H.C. which might have occurred in the sprayed areas.

A total of 12,035 huts were sprayed and the following mosquitoes collected:-

115	A.gambiae
44	A.funestus group
39	A.rufipes
48	A. demeilloni
2	A.parensis
15	A.coustani
6	A.longipalpis
2	A.marshalli
2	A.pretoriensis
1	A.nili

Potential breeding places were searched for malaria vector mosquitoes and the specimens forwarded to the Health Office for identification.

The larvae collected were:

1078	A.gambiae
30	A.funestus
867	A.pretoriensis
234	A.maculipalpis
72	A.rufipes
27	A.listeri
252	A.squamosus
1	A.squam. Var. Cyd.
5	A.natalensis
140	A.coustani
21	A.leesoni
6	A.demeilloni
17	A.marshalli

NKAMBENI AREA.

There has been a steady increase in the incidence of A.gambiae adults and larvae in the unsprayed area of Nkambeni, extending to both sides of the Komati river.

/Surveys have...

Surveys have proved, however, that the mosquito is exophilic and zoophilic; no transmission of malaria has taken place. Blood examinations in this area had been intensified and it would appear that we have reached a stage of anophelism without malaria at Nkambeni.

Observations should however be continued.

PRECIPITIN TEST RESULTS.

Of the 21 A.gambiae collected in huts by space spraying and also by using animal and man baited calf nets at Nkambeni, 15 had fed on bovine blood and 5 were reported as having fed on "unidentified bovid".

PLACE	NUMBER COLLECTED	METHOD OF COLLECTION	RESULTS
NKAMBENI	17	Space spray of hut	11 Bovid 5 unidentified bovid 1 negative
"	3	Calf baited net	3 Bovid
"	1	Man baited net	1 Bovid

/Night Catched at Umfula Planters.

NIGHT CATCHES AT UMFULA PLANTERS.

DATE	MAN BAITED NET. A.GAMBIAE				ANIMAL (BOVINE) BAITED NET. A.GAMBIAE				WINDOW CAGE COLLECTIONS FROM 8 HUTS A.GAMBIAE			
	FED	UNFED	TOTAL	OTHER SPECIES	FED	UNFED	TOTAL	OTHER SPECIES	FED	UNFED	TOTAL	OTHER SPECIES
23.10.62		Nil		1 A.pretoriensis		Nil		11 A.maculipalpis 46 A.marshalli 1 A.rufipes 16 A.coustani 4 A.pretoriensis 3 A.demeilloni	1	1	2	Nil
24.10.62	-	-	-	53 A.coustani 15 A.marshalli 3 A.pretoriensis	-	-	-	280 A.marshalli 22 A.maculipalpis 249 A.coustani 2 A.pretoriensis 1 A.demeilloni 1 A.cinereus			-	5 A.coustani 2 A.marshalli
25.10.62	-	2	2	2 A. pretoriensis 18 A.coustani 5 A.marshalli				35 A.maculipalpis 153 A.marshalli 108 A.coustani 13 A.pretoriensis 10 A.maculipalpis 2 A.rufipes	-	1	1	1 A.coustani 3 A.marshalli
28.10.62	-	-	-	18 A.coustani 1 A.maculipalpis	-	-	-	119 A.coustani 2 A.ardensis 183 A.marshalli 1 A.pretoriensis 5 A.rufipes 14 A.maculipalpis	-	-	-	2 A.coustani 2 A.marshalli
29.10.62	-	-	-	26 A.coustani 5 A.marshalli	-	-	-	57 A.coustani 184 A.marshalli 13 A.maculipalpis 3 A.pretoriensis 1 A.demeilloni 1 A.squamosus	-	-	-	1 A.rufipes 1 A.marshalli 2 A.coustani
31.10.62	-	-	-	-		1		7 A.coustani 14 A.marshalli 17 A.maculipalpis 2 A.pretoriensis 3 A.rufipes 1 A.demeilloni 1 A.cinereus	-	-	-	1 A.marshalli
1.11.62	-	-	-	25 A.coustani 15 A.marshalli 2 A.maculipalpis 13 A.marshalli	1	-	1	175 A.marshalli 46 A.coustani 2 A.rufipes 4 A.demeilloni 15 A.maculipalpis 1 A.nili				3 A.coustani 2 A.marshalli
2.11.62	-	-	-	7 A.coustani 5 A.marshalli 2 A.maculipalpis				56 A.coustani 166 A.marshalli 21 A.maculipalpis 2 A.demeilloni 6 A.pretoriensis 1 A.rufipes				Nil
February 1963									15	4	19	culicine

BIG BEND. (Umfula Planters)

The number of A.gambiae found at Big Bend were so small that it was almost impossible to assess any change in behaviour to that of the previous season.

15 A.gambiae found in Window cages during February which were collected and taken to the S.A.I.M.R. by Entomoligist H. Patterson, had fed on man, and he was able to establish a colony of mosquitoes from this area.

It was during cross breeding experiments conducted at the S.A.I.M.R. that Patterson discovered that the material from Big Bend was tolerant to salt water. We were therefore dealing with Anopheles merus Donitz (Salt water A.gambiae) which is believed to be a less efficient vector than the fresh water-breeding species due to differences in their behaviour.

The salinity of one of the specimens of water collected on this farm was equivalent to 63.1% of that of sea water.

Big Bend is some 56 miles inland from the sea and over 75 miles up the Usutu River. This is the first time on record that A.merus had been found at that distance from the sea.

Work done in this connection has been published by Patterson and van Eeden.

Anopheles parensis in Swaziland.

Shortly after control measures were instituted in Swaziland, Dr Mastbaum reported that A.funestus had probably disappeared. Since then more intensive searches made of typical breeding places revealed that A.funestus was still here but as the adult mosquito did not seem to bite man or rest in human habitation, it was not considered to be efficient malaria vector.

It has also been established that there are numerous groups of this species which are morphologically inseparable. There are however differences in the larvae and eggs and unless one has all the stages of this mosquito at one's disposal, it seems impossible to determine species with certainty. The extent to which each group may be incriminated in the spread of malaria requires further intensive research work.

Specimens reared from wild caught larvae in the Msimneni river near Manzini, were taken to the East African Institute of Malaria at Amani in Tanganyika in 1959.

It is interesting to note from a recent publication by Dr. M.T. Gillies on "A new Species of Anopheles funestus complex from East Africa", that A.parensis was seen amongst the specimens he received from Swaziland. (Reference:- Proceedings of the Royal Entomological Society of London, Series B. Taxonomy Vol. 31 Parts 7-8 August 13th 1962).

BLOOD EXAMINATIONS AND CASE FINDING.

In order to detect parasite carriers, bloodsmears were taken at random by each field assistant. All positive cases were treated and investigated in view of determining the likely sources of infection. As in the case with positive immigrants, each case was followed up by more extensive bloodslides of people in the vicinity and also by conducting the normal entomological surveys.

/The control...

The control of immigration into the territory has recently been tightened up by legislation. This should have some bearing on the incidence of malaria in the near future.

The Mocambique Government, working in conjunction with the W.H.O., are now in the second year of their eradication project. Should their effort be as successful as that of Swaziland, it may be possible to curtail control work within the near future and to maintain a surveillance work only.

/Analysis of Bloodslides...

ANALYSIS OF BLOODSLIDES EXAMINED FROM 1ST JULY, 1962 TO 30TH JUNE, 1963.

Total number of slides examined 25,339

SOURCE FROM WHICH ALL SLIDES WERE COLLECTED.

SOURCE	NEGATIVE	POSITIVE	TOTAL	% POSITIVE
Indigenous	22809	33	22842	0.14%
Immigrants	2403	94	2497	3.8%
	25212	127	25339	

IMMIGRANTS ORIGINATED FROM THE FOLLOWING PLACES.

SOURCE	NEGATIVE	POSITIVE	TOTAL	% POSITIVE
Mocambique	986	68	1054	6.45%
Zululand	699	17	716	2.37%
Transvaal	604	6	610	199%
Others	114	3	117	2.56%
	2403	94	2497	

There has been a proportionate decrease in the parasite rate from all sources. It is quite evident that immigrants from North Zululand and Mocambique remain a danger to Swaziland.

APPENDIX IV.

ANNUAL REPORT ON BILHARZIA

JANUARY TO DECEMBER 1963.

(a) Bilharzia Control Pilot Project at Phonjwana.

DAM: Re-survey

16.1.63	0	Physopsis	0	B.forskalii	
25.2.63	0	"	16	"	
28.3.63	0	"	21	"	
30.4.63	0	"	61	"	
4.6.63	0	"	87	"	
17.7.63	0	"	144	"	
28.8.63	0	"	81	"	
27.9.63	0	"	35	"	
1.11.63	0	"	79	"	
4.12.63	24	"	85	"	First time in 15 months.
23.12.63	10th Sulphation.				

STREAM:

16.1.63	0	Physopsis	0	B.forskalii	
25.2.63	0	"	7	"	
28.3.63	0	"	38	"	
30.4.63	0	"	38	"	
4.6.63	0	"	21	"	
17.7.63	0	"	32	"	
28.8.63	0	"	19	"	
27.9.63	0	"	6	"	
1.11.63	0	"	13	"	
4.12.63	1	"	13	"	First time in 15 months.
23.12.63	3rd Sulphation.				

(b) Snail Control Pilot Project - "Thandelizwa", Manzini District.

MAIN STREAM: Re-survey

6.2.63	0	Physopsis	22	Lymnaea	27	B.forskalii
28.2.63	0	"	25	"	33	"
27.3.63	0	"	51	"	13	"
25.4.63	0	"	36	"	7	"
31.5.63	0	"	32	"	0	"
28.6.63	0	"	25	"	1	"
30.7.63	0	"	40	"	0	"
30.8.63	0	"	21	"	3	"
25.9.63	0	"	8	"	1	"
31.10.63	0	"	22	"	10	"
27.11.63	0	"	43	"	12	"
31.12.63	0	"	54	"	14	"

TRIBUTARY:

6.2.63	0	Physopsis	0	Lymnaea	
28.2.63	0	"	0	"	
27.3.63	0	"	0	"	
25.4.63	0	"	0	"	
31.5.63	14	"	2	"	
28.6.63	0	"	0	"	2 Biomphalaria
30.7.63	0	"	6	"	
30.8.63	0	"	0	"	
25.9.63	0	"	3	"	
31.10.63	0	"	11	"	
27.11.63	0	"	11	"	
31.12.63	0	"	35	"	

(c) ECOLOGICAL SURVEYS.

R.S. WEIR, MZIMNENE RIVER, MANZINI. See Figures 1 & 2.

MONTH	WATER TEMP. C.	RAINFALL IN M.M.	PHYSOPSIS (4 MAN HOURS SEARCHING)				NO. SHEDDING CERCARIAE	BREEDING NO. OF EGG MASSES IN 4 HOURS
			Smaller than 3 m.m.	Larger than 3 m.m.	Larger than 6 m.m.	TOTAL		
JANUARY	75	132.5	0	3	29	32	7	19
FEBRUARY	74	125.0	0	1	22	23	6	9
MARCH	65	88.8	0	1	53	54	2	39
APRIL	63	146.5	0	0	33	33	7	26
MAY	61	20.5	0	4	124	128	14	43
JUNE	58	111.5	0	0	92	92	4	26
JULY	56	55.5	0	2	67	69	2	24
AUGUST	63	0.0	0	0	97	97	2	31
SEPTEMBER	68	7.5	0	0	84	84	9	137
OCTOBER	72	94.0	0	28	144	172	7	33
NOVEMBER	75	65.6	0	9	91	100	16	42
DECEMBER	75	33.7	0	11	78(8)	89(8)	3	26

FIG. 1

No OF PHYSOPSIS & EGG MASSES FOUND MONTHLY AT R.C WEIR, MZIMNENE RIVER & CERCARIAL SHEDDING INFECTIVITY RATE

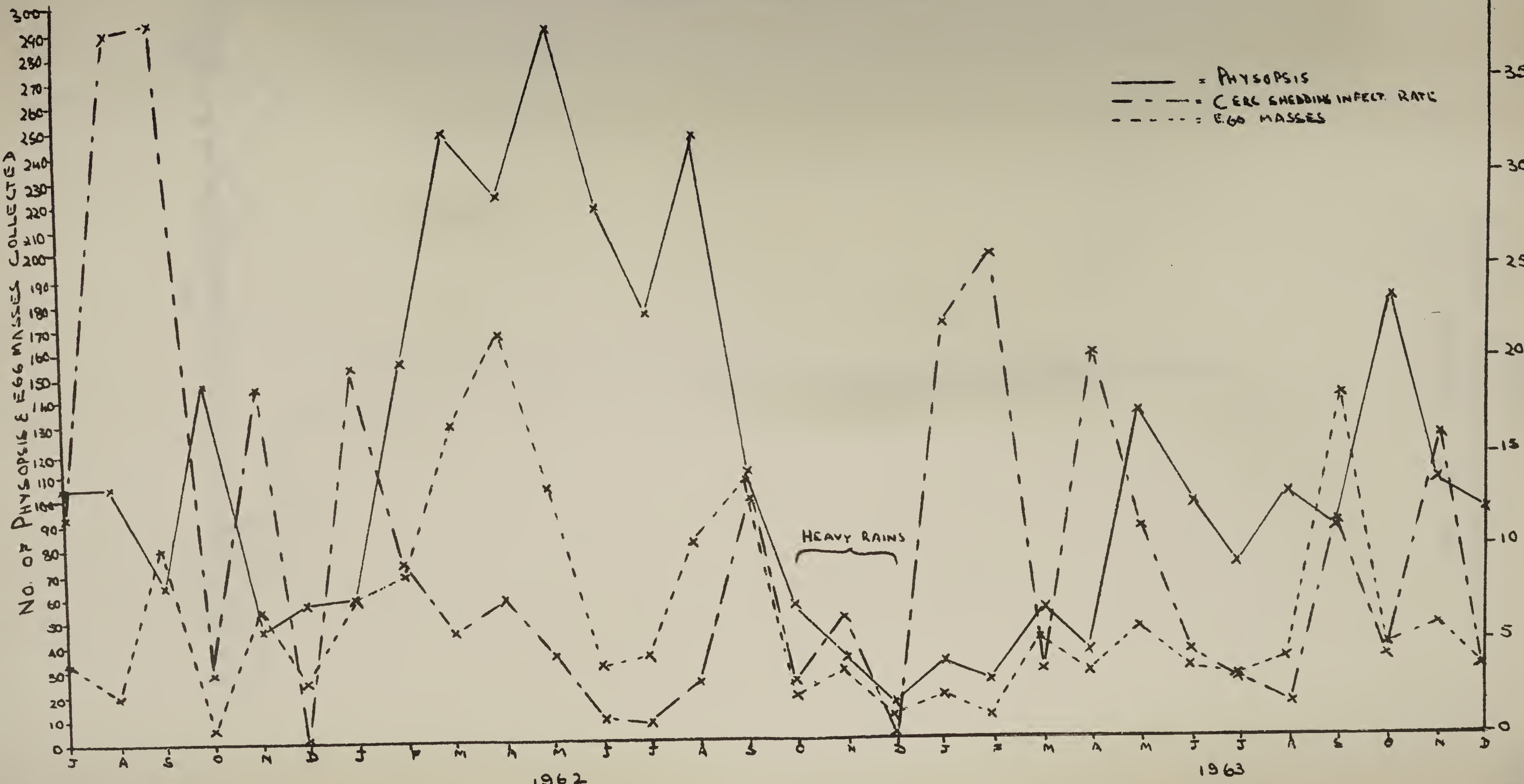
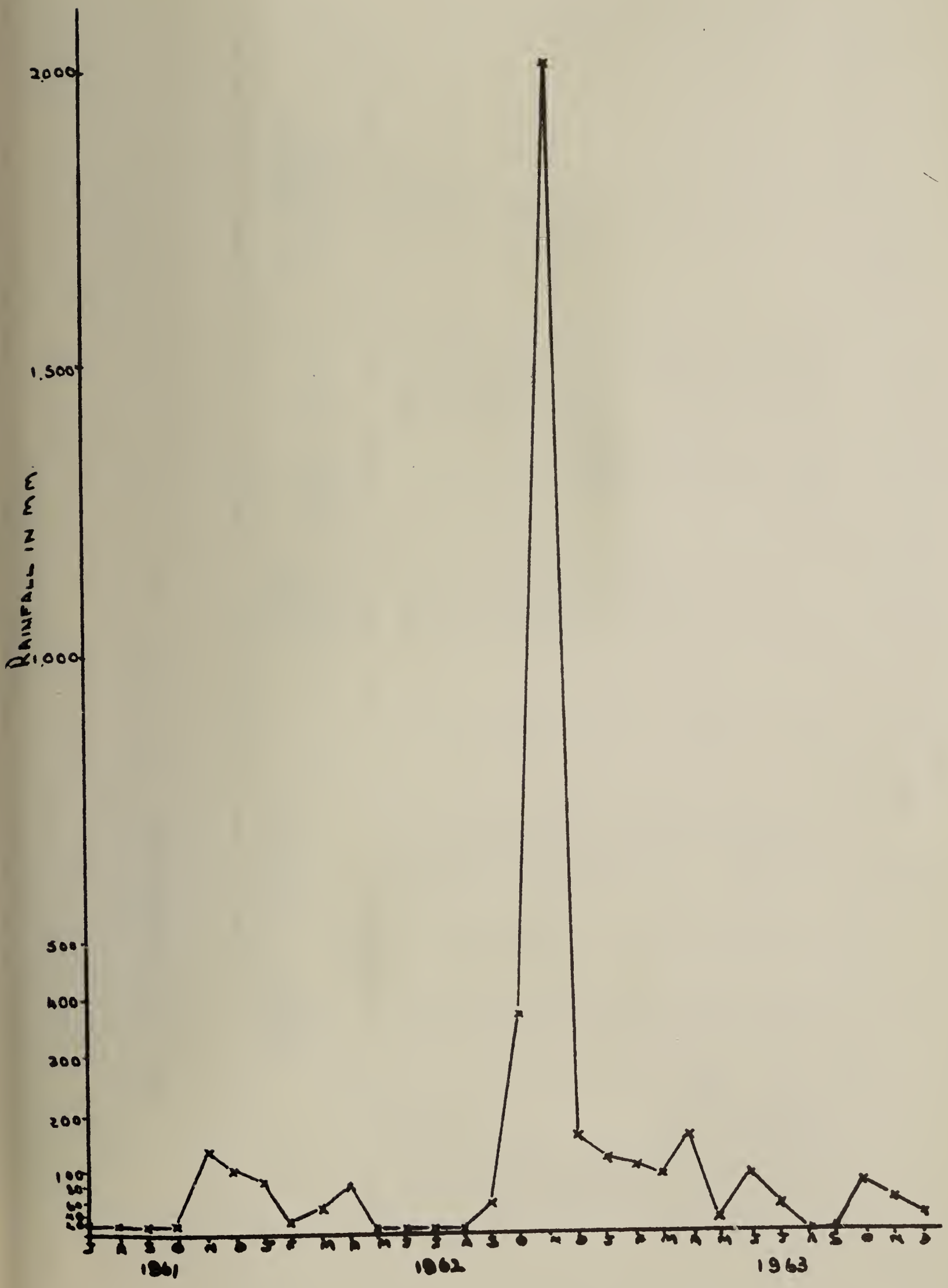


FIG. 2

MONTHLY RAINFALL FOR MANZINI FROM JULY 1961 - DEC 1963



TUNG OILS (UPPER DAM) See Figure 3.

MONTH	WATER TEMP. °F.	RAINFALL IN M.M.	BIOMPHALARIA (3 MAN HOURS)				NO. SHEDDING CERCARIAE
			Smaller 3 m.m.	Larger than 3 m.m.	Larger than 6 m.m.	TOTAL	
JANUARY	74	132.5	2	34(1)	30(4)	66(5)	0
FEBRUARY	74	125.0	5	20(7)	69(6)	94(13)	0
MARCH	66	88.8	0	41(1)	45(3)	86(4)	0
APRIL	63	146.5	5(1)	33(5)	27(2)	65(8)	0
MAY	58	20.5	0	18(12)	12(2)	30(14)	0
JUNE	54	111.5	1(1)	8(6)	7(2)	16(9)	0
JULY	54	55.5	0	1(11)	0(7)	1(18)	0
AUGUST	62	0.0	0	2(4)	1(1)	3(5)	0
SEPTEMBER	69	7.5	0(1)	0(6)	1(10)	1(17)	0
OCTOBER	71	94.0	1	0(4)	7(1)	8(5)	0
NOVEMBER	71	65.6	0	4(3)	11(2)	15(5)	0
DECEMBER	78	33.7	10	11	45(12)	66(12)	0

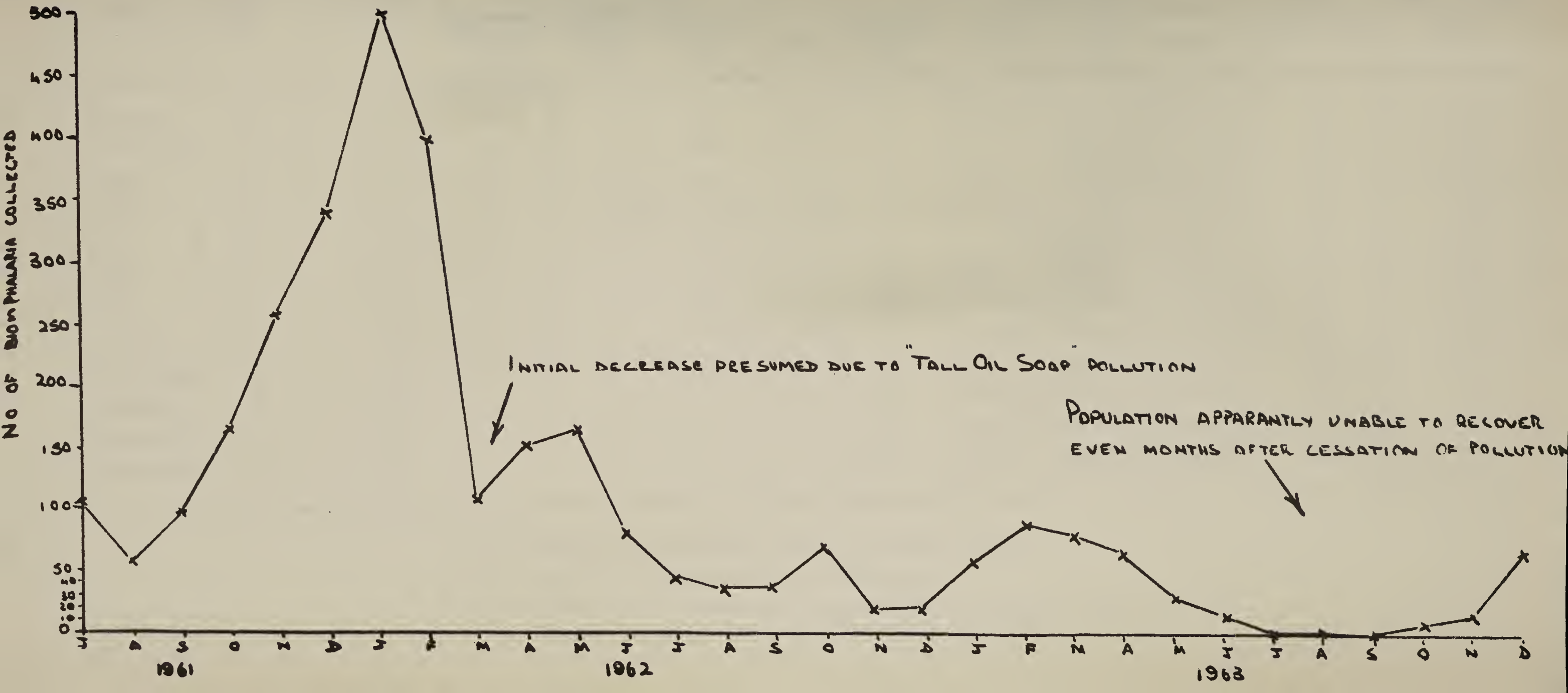
(1) Figures in brackets indicate dead snails.

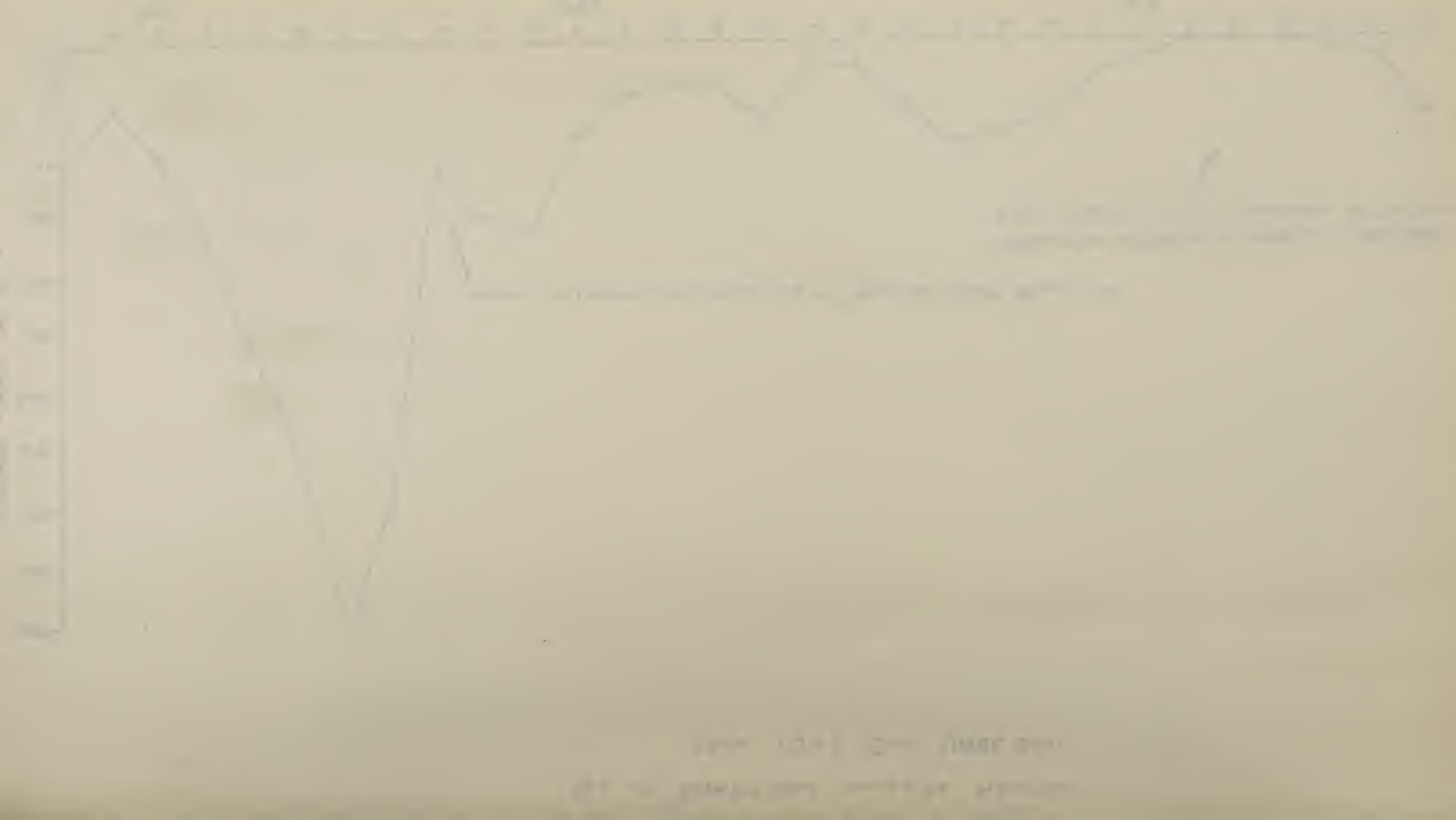
(2) Rainfall figures are for Manzini.

FIG. 3.

NO OF BIOMPHALARIA COLLECTED MONTHLY

FROM TUNG OILS UPPER DAM.





TUNG OILS (LOWER DAM). See Figure 4.

MONTH	WATER TEMP. °F.	RAINFALL IN M.M.	PHYSOPSIS (4 MAN HOURS SEARCHING)				BIOMPHALARIA (4 MAN HOURS SEARCHING)				NO. SHEDDING CERCARIAE	BREEDING-EGG MASSES IN 4 HOURS
			Smaller than 3 m.m.	Larger than 3 m.m.	Larger than 6 m.m.	TOTAL	Smaller than 3 m.m.	Larger than 3 m.m.	Larger than 6 m.m.	TOTAL		
JANUARY	79	132.5	0	0	11	11	4	142(1)	497(27)	643(27)	0	46
FEBRUARY	76	125.0	0	2	20	22	7	49	541(10)	597(10)	0	28
MARCH	72	88.8	0	10	15	25	1	163	889(13)	1053(13)	0	75
APRIL	67	146.5	0	5(1)	6(2)	11(3)	1	56(2)	772(12)	829(14)	0	52
MAY	61	20.5	1	3	12	16	1	73(2)	1666(10)	1740(12)	0	86
JUNE	57	111.5	0	1	11	12	5	189	2305(3)	2499(3)	0	69
JULY	58	55.5	0	0	10	10	0	116(4)	1974(25)	2090(29)	0	88
AUGUST	66	0.0	0	1	0(1)	1(1)	2	128(15)	1388(16)	1518(21)	0	82
SEPTEMBER	73	7.5	0	0	6	6	0	12	491(38)	503(38)	0	93
OCTOBER	74	94.0	0	1	5	6	19	308(13)	745(41)	1072(44)	0	88
NOVEMBER	74	65.6	0	0	4	4	31	364(2)	1348(24)	1743(26)	0	63
DECEMBER	80	33.7	0	0	3	3	112	761	928(66)	1801(66)	0	54

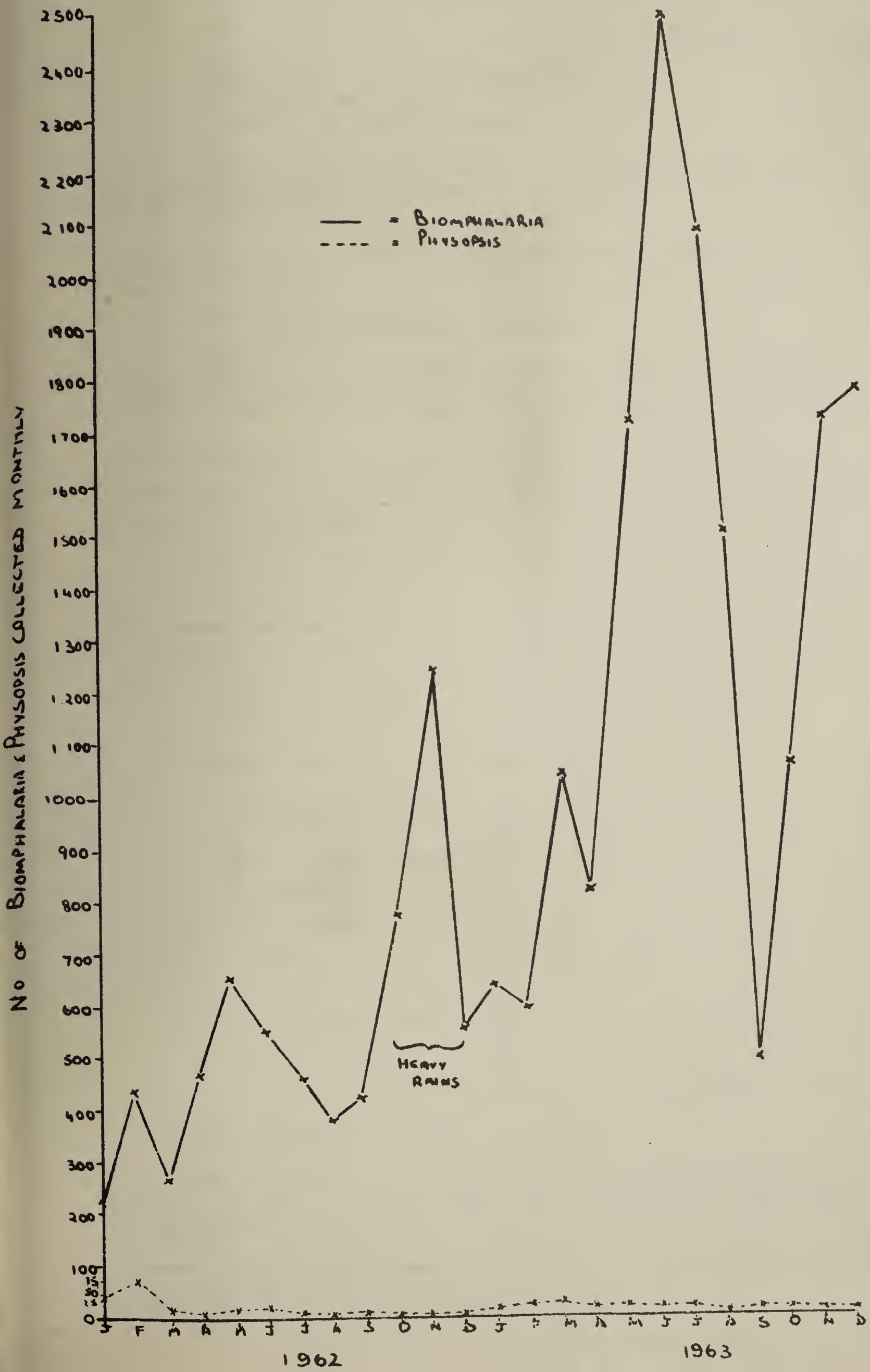
(1) Figures in brackets indicate dead snails.

(2) Rainfall figures are for Manzini.

(3) Decrease in September probably due to ducks which were no longer present during subsequent surveys.

FIG 4

NO OF BIOMPHALARIA & PHYSOPSIS COLLECTED MONTHLY FROM TUNG OILS LOWER DAM



(d) BALEGANE RANCH.

In view of a definite recent infection of vesical bilharziasis at Balegane Ranch, it was decided to carry out an investigation in order to determine whether he may have contracted the disease on the farm.

Places where he could have made contact with water were surveyed with the following results:-

Portion of Komati River	- 0	Physopsis	0	Biomphalaria
Canal from river to reservoir	- 0	"	0	"
Reservoir and Tanks	- 0	"	0	"
2 cattle drinking troughs	- 0	"	many	"

When a survey was carried out here in July 1959, 3 biomphalaria and 1 physopsis were found in the same portion of the Komati River.

It is thus possible that the infection could have been contracted there.

(e) UBOMBO RANCHES, BIG BEND.

With a view to possible snail control measures at Ubombo Ranches, a parasitological survey of children in the various compounds was conducted. The results were as follows:

AGE GROUP	S.HAEMATOBIUM			S.MANSONI		
	NO. EXAM.	NO. +VE	% +VE	NO. EXAM.	NO. +VE	% +VE
0 - 10	155	82	53	147	71	48.3
11 - 20	50	33	66	50	24	48
TOTALS	205	115	56	197	95	48.2

Double infections: 68 out of 192 = 35.4%

Other parasitic ova found were:

	NO. EXAM.	NO. +VE	% +VE
ASCARIS	197	26	13.2
TRICHURIS	197	25	12.7
TAENIA	197	15	7.6
H.NANA	197	1	0.5
STRONGYLOIDES	197	1	0.5
S. MATTHEEI	197	1	0.5

(f) NGONINI ESTATES.

On receipt of a request from the Manager of Ngonini Estates, a film entitled "The Human Blood Fluke" was shown to the European staff and a lecture-demonstration given to them afterwards. The Manager stated that there had been a number of cases of Bilharzia among his staff and that such knowledge might help to prevent further infection. He was also interested in possible methods of control.

/A snail survey

A snail survey was also carried out and a comparison with a previous survey is made.

	PHYSOPSIS		BIOMPHALARIA	
	MARCH 1959	MARCH 1963	MARCH 1959	MARCH 1963
Main Canal	0	1	52	0
Main Canal Dam	0	13	25	25
Dam No. 1	4	5	146	76
" 2	99	0	1	2
" 5	117	61	23	143
" 6	28	1	1	33
" 7	0	0	1	0
Bathing Site No.2 Compound	196	115	0	11
Female Bathing Site in Lomati River	0	2	0	3
Male Bathing Site in Lomati River	0	0	0	0
	444	198	249	293

The addition of CuSO4 on two occasions, (the last being ± 11 months ago) in large quantities to the main canal after partial drying out, in order to kill water weeds, may account for the lack of snails. On the other hand, surveys of the main canal carried out during November 1958 and July 1959 resulted in no Biomphalaria or Physopsis being found and very few other kinds of snail.

The main canal traverses the western and part of the northern boundary of the Estates hugging closely the Komati River, from whence the water is taken and is again returned to this river after passing through a hydro. No direct irrigation is carried out from this canal. Instead, the water is pumped by means of a 10 Cu SEC. centrifugal pump into a higher canal which flows into a large dam. This dam feeds the other dams and the subsidiary canals. There are in addition, a few streams which flow through the Estates.

A pilot project is therefore suggested as follows:-

1. Sulphate main branch canal, i.e. canal into which water from the main canal is pumped, and main dam No. 1, into which main Branch canal flows.

2. The chances that snails, eggs or cercariae will be introduced into the main branch canal via the centrifugal pump is possibly remote. There is a head of 167 feet on this 285 H.P. pump. The pressure is therefore approximately 84 lbs. per sq. inch.

3. If the main branch canal and dam can be kept free of snails for a reasonable period, there is then no reason why the scheme cannot be extended.

/The full snail...

The full snail control project could then be approached along the following lines:-

1. Complete molluscicididing (together with removal of vegetation) of all canals and dams.

2. Drip feeds on the main branch canal may be necessary.

3. Streams to be securely fenced where access thereto can easily be gained.

4. Dams which are fairly close to the Compounds would be available for swimming.

   Showers with water from the Main Dam No. 1 have been provided in the compounds as well as sanitary accommodation.

PARASITOLOGICAL SURVEY.

Urine and stools were examined and the results are compared with previous surveys.

DATED	S. HAEMATOBIUM				S. MANSONI			
	AGE GROUP	NO. EXAM.	NO. +VE	%+VE	AGE GROUP	NO. EXAM.	NO. +VE	%+VE
MAR. 1963	0-10	50	32	64	0-10	50	34	68
	11-20	50	36	72	11-20	50	39	78
	TOTALS	100	68	68	TOTALS	100	73	73
NOV.1958/ MAR.1959	TOTAL	100	80	80	TOTAL	89	30	34

No. of double infections = 54/100 = 54%

Here too as at Big Bend there has been a phenominal increase in the incidence of intestinal bilharziasis. Nowhere else is it higher than 73%

Other parasitic ova found during March 1963 were:-

	No. Examined	No. +VE	% +VE
S. MATTHEEI	100	3	3%
ENTEROBIUS	100	2	2%
TAENIA	100	1	1%

(g) FILM ON BILHARZIA.

A 16 m.m. film entitled "The Human Blood Fluke" was obtained from Messrs. Burroughs Wellcome and Company (S.A.) Ltd., and was shown to the student teachers of the Teachers Training Centre, Manzini and student nurses of the R.F.M. Hospital at the Teachers Training Centre. As has already been mentioned, this film was also shown at Ngonini Estates.

On another occasion, at the request of the Sister Tutor of the R.F.M. Hospital, this film was again shown to the student nurses.

/BIG BEND...

(h) BIG BEND.

Snail and parasitological surveys were carried out at Big Bend Ranches Limited and Crookes Plantations in order to compare the position at present with previous findings. The results are as follows:-

SNAILS.

PLACE	BIOMPH.		PHYSOPSIS		TROP.		MELANOIDS	
	MAR. 1959	MAR. 1963	MAR. 1959	MAR. 1963	MAR. 1959	MAR. 1963	MAR. 1959	MAR. 1963
BIG BEND								
Main Canal	0	0	0	0	0	0	486	+ +
Branch Canal No.1	0	0	0	0	0	0	8	+ +
" " " 2	0	0	0	0	16	21	1	+ +
" " " 5(a)	0	0	0	0	4	0	1	+ +
	0	0	0	0	20	21	+ +	+ +
CROOKES								
Main Canal	0	0	0	0	0	0	258	+ +
Branch Canal No.1	105	0	3	2	+	20	+	10
Dam No. 1	30	22	19	6	51	23	0	16
Pool No. 1	11	22	0	9	+	48	0	0
" " 2	0	79	0	11	0	26	0	0
" " 3	0	12	0	0	0	6	0	0
" " 4	26	22	0	10	+ +	20	0	0
" " 5	12	61	1	5	+	20	0	0
	184	218	23	43	+ +	+ +	+ +	+ +

At Big Bend, the only intermediate hosts found were in a short stream adjoining the River Compound and in a canal which extends from the Main Canal past the European dwellings and terminates in the orchard below said dwellings.

Sulphation of these two sources would be relatively inexpensive and in view of the fact that there can obviously not be many Biomphalaria or Physopsis in the main canal, re-infestation would probably not readily take place.

PARASITES.

Urine and stool surveys conducted during April are compared with surveys conducted in 1958:-

	S.HAEMATOBIUM		S.MANSONI	
	OCT/NOV.'58	APRIL '63	OCT/NOV.'58	APRIL '63
CROOKES PLANTATION	13/17=76.5%	33/54=61%	2/17=11.8%	13/54=24%
BIG BEND RANCHES	17/23=73.9%	31/62=50%	0/23= 0%	23/62=37%

Although the numbers examined in 1958 are rather too low to be of real statistical significance, it is however significant that whilst the S.Haematobium %s for 1958 are rather higher than those for 1963, the %s for S.Mansoni are such as to indicate a definite increase over the past 4½ years.

/ "Tilapia"...

(i) "TILAPIA" - MALKERNS - MR. B. JACOBSON.

At the request of Mr. Jacobson, a snail survey of the main dam from which water for domestic use was obtained was carried out. It was found to contain Physopsis probably introduced via the Malkerns Irrigation canal.

(j) PLOT 25 - MANZINI ESTATES - MR. E. LEWIS.

At the request of Mr. Lewis, a dam and the stream feeding it were surveyed and as a result Physopsis were found in the stream.

Advice was given on the methods recommended for rendering this water safe for domestic use.

(k) EVUSWENI, PIGGS PEAK DISTRICT.

During 1962, an epidemiological survey was carried out at Evusweni, as a result of which it appeared that one small focus was responsible for the 64.5% incidence of urinary bilharziasis amongst the school children.

Consequently during May, a more comprehensive survey of the waters in this area was carried out and once again Physopsis appeared to be confined to a section of a stream ± 400 yards long and 22 were found, one shedding mammalian cercariae. This section was then sulphated and after re-survey, 13 dead Physopsis were found.

(l) MLILWANE GAME SANCTUARY.

At the request of the Medical Officer of Health, Mbabane, a snail survey of the Mhlambanyati River was conducted, concentrating on that portion adjoining the warm springs where the public would perhaps be tempted to swim.

No snails could be found in a half mile stretch of river, nor in the warm springs themselves, where the temperature was 85°F.

In view of the fact that Dr. Batchelor had apparently found Physopsis in this river, it is not therefore considered to be without risk to swim there.

(m) MZIMNENE RIVER, MANZINI.

A complaint was received that the scholars at St. Michaels School, Manzini were contracting bilharzia by having to cross the Mzimnene River at the drift below the Swaziland Milling Company.

Investigation revealed the presence of Physopsis immediately above the drift, one of which was shedding mammalian type cercariae.

Large stones to facilitate crossing, were subsequently laid across the stream and the Sister-in-charge of the school was requested to inform the children to cross on the stones.

(n) ATTEMPT TO INFECT B.FORSKALII WITH S.HAEMATOBIUM.

B. Forskalii were exposed to the miracidia of S.Haematobium, but there were no signs of cercariae after six and even eight weeks.

/Distribution...

(o) DISTRIBUTION OF BILHARZIASIS INTERMEDIATE HOSTS IN RELATION TO SOIL AND GEOLOGICAL STRUCTURE.

Survey maps were obtained from the Departments of Agriculture and Geological Survey and a possible relationship was sought between the distribution of intermediate hosts and soil and geological structures. Nothing of real significance was forthcoming.

(p) EXAMINATION OF URINES AND STOOLS AT THE HEALTH OFFICE, MANZINI.

226 urines and 9 stools were examined at the Health Office, Manzini for bilharzia.

APPENDIX V.

RETURN OF CASES TREATED : GOVERNMENT AND MISSION HOSPITALS, 1963.

Detailed List No.	Group Causes	Total Cases	Out-patients	In-patients	Deaths
001-008	Tuberculosis, Respiratory System	915	287	628	63
010	Tuberculosis of Meninges or C.N.S.	10	2	8	3
011	Tuberculosis of Intestines and Peritoneum	43	7	36	
012-013	Tuberculosis of Bones and Joints	43	6	37	1
014-019	Tuberculosis - All other forms	165	126	39	
020	Congenital Syphilis	60	52	8	
021	Early Syphilis	580	558	22	
024	Tabes Dorsalis	3	2	1	1
022-023) 026-029)	All other Syphilis	214	187	27	1
030-035	Gonococcal Infection	1434	1412	22	
036-039	Other Venereal Diseases	108	105	3	1
040-041	Enteric Fever	356	4	352	14
044	Brucellosis	10	4	6	
045	Bacillary Dysentery	410	318	92	2
046	Amoebiasis	237	58	179	15
050	Scarlet Fever	1		1	
053	Septicaemia	1		1	1
055	Diptheria	18	2	16	8
056	Whooping Cough	502	393	109	5
057	Meningococcal Infections	5		5	1
060	Leprosy	12	11	1	
061	Tetanus	15	2	13	8
080	Acute Poliomyelitis	1		1	
080-083	Late Effects of Poliomyelitis	2	2		
084	Smallpox	95	16	79	2
085	Measles	667	502	165	5
092	Infectious Hepatitis	51	25	26	
104	Tick-bite Fever	37	32	5	1
116	Malaria	16	3	13	
123-1	Bilharzia (Vesical)	763	708	55	
123-0	Bilharzia (Intestinal)	12	2	10	1
126	Tape Worm	575	548	27	
130-0	Ascariasis	577	559	18	
124,128) 130-1)	Other Helminthic Diseases	115	105	10	
049	Poisoning - Food	8	7	1	
087	Chickenpox	178	147	31	
131	Dermatophytosis	466	466		
135	Scabies	84	83	1	
137,138	Other Infective and Parasitic Diseases	393	363	30	
140-150	Malignant Neoplasms of (a) Mouth, Pharynx & Oesophagus	9	3	6	2
151-154	(b) Stomach, Intestine, Rectum	7	3	4	3
161-163	(c) Larynx, Trachea, Lung	8	1	7	3
170	(d) Breast	6	5	1	
171	(e) Cervix Uteri	23	6	17	1
172	(f) Body of Uterus	12	8	4	
177	(g) Prostate	2		2	1
191-9	(h) Skin	10	8	2	
196-7	(i) Bone & Connective Tissue	1	1		

/(j) All other Sites

Detailed List No.	Group Causes	Total Cases	Out-patients	In-patients	Deaths
	Malignant Neoplasms:				
199	(j) All Other Sites	52	13	39	10
204	Leukaemia	3		3	1
210-239	Benign Neoplasms	307	202	105	
250-251	Non-Toxic Goitre	91	86	5	
252	Thyrotoxicosis	17	11	6	
260	Diabetes Mellitus	37	14	23	3
281	Pellagra	603	543	60	4
282	Scurvy	43	19	24	5
286-6	Kwashiorkor	463	278	185	32
286-5	Malnutrition - unqualified	1290	1060	230	34
290	Hyperchromic Anaemias	9	7	2	
291	Hypochromic Anaemias	6	5	1	
292,293	Anaemia, unspecified	428	388	40	
241	Asthma	515	413	102	
240,242) 245)	Other Allergic Disorders	355	343	12	
300-309	Psychoses	21	7	14	1
310,324) 326)	Psychoneuroses & Hysteria	342	297	45	
325	Mental Deficiency	52	41	11	
330-334	Vascular Lesions of C.N.S.	18	12	6	3
340	Meningitis (Non-Meningococcal)	31	11	20	2
353	Epilepsy	95	53	42	
370-379	Inflammatory Diseases of Eye	1656	1590	66	
385	Cataract	63	35	28	
387	Glaucoma	7		7	
390	Otitis Externa	237	233	4	
391-393	Otitis Media & Mastoiditis	1334	1236	98	
380-384	All Other Diseases of Eye	495	424	71	
341-344	All Other Diseases of C.N.S. & Sense Organs	567	508	59	5
400-402	Rheumatic Fever	41	20	21	1
410-416	Chronic Rheumatic Heart Disease	99	72	27	1
420-422	Arterio-Sclerotic & Degenerative Heart Disease	162	86	76	16
430-434	Other Diseases of Heart	460	314	146	21
440-443	Hypertension & Heart Disease	156	141	15	2
444-447	Hypertension	323	265	58	2
450-456	Diseases of Arteries	18	16	2	
460-468	Other Diseases of Circulatory System	608	513	105	10
470-475	Acute Upper Respiratory Tract Infections including Acute Tonsillitis	4581	4160	421	
480-483	Influenza	2696	2347	349	
490	Lobar Pneumonia	316	129	187	13
491	Broncho-Pneumonia	936	604	332	31
492,493	Atypical Pneumonia	112	49	63	9
500	Acute Bronchitis	3482	3236	246	9
501,502	Bronchitis, Chronic & Unspecified	705	669	36	
512	Chronic Pharyngitis & Chronic Tonsillitis	352	307	45	
518,521	Empyeme & Lung Abscess	7	1	6	
519	Pleurisy	217	168	49	
523	Pneumoconiosis	30	20	10	
520-522	Other Respiratory Diseases	176	168	8	
530	Dental Caries	3375	3331	44	
531-535	All Other Diseases of Teeth & Gums	583	557	26	

/Gastric Ulcer

Detailed List No.	Group Causes	Total Cases	Out-patients	In-patients	Deaths
540	Gastric Ulcer	43	36	7	
541	Duodenal Ulcer	15	11	4	
543	Gastritis & Duodenitis	1175	1078	97	1
550-553	Appendicitis	169	70	99	
570	Intestinal Obstruction	12	3	9	2
560	Hernia	99	64	35	
570-0	Gastro-enteritis (4 weeks to 2 years)	3929	3373	556	94
571-1	Gastro-enteritis (over 2 years)	2864	2529	335	24
572	Chronic Enteritis and Colitis	284	262	22	5
581	Cirrhosis of Liver	119	63	56	13
584,585	Cholecystitis	396	329	67	6
536-539) 544,573) 580,582) 583,586) 587)	Other Diseases of Digestive System	1867	1651	216	9
590	Acute Nephritis	53	27	26	2
591-594	Chronic Nephritis	31	18	13	2
600	Infection of Kidneys	706	504	202	4
602,604	Calculi of Urinary System	8	6	2	
610	Hyperplasia of Prostate	25	23	2	
620,621	Diseases of Breast	99	72	27	
613	Hydrocele	87	61	26	
634	Disorders of Menstruation	1713	1501	212	
601,603) 605-609) 611,612) 614-617) 622-633) 635-637)	All other Diseases of Genito-Urinary System	4713	3862	851	8
660	Normal Deliveries	2253		2253	
671,) 673-678)	Deliveries with Complications	355		355	11
640,641) 681,682) 684)	Sepsis of Pregnancy, Childbirth and Puerperium	47	31	16	
642	Toxaemia of Pregnancy	34	10	24	1
643,644) 670,672)	Haemorrhage of Pregnancy and Childbirth	28	4	24	
650	Abortion	395	85	310	
651	Abortion with Sepsis	38	19	19	
690-698	Infections of Skin and Subcutaneous Tissues	2406	2022	384	
720-725	Arthritis and Spondylitis	427	368	59	
726,727	Muscular Rheumatism & Rheumatism Unqualified	1768	1578	190	
730	Osteomyelitis & Peri-Ostitis	105	53	52	1
737,745) 749)	Ankylosis & Acquired Musculo-Skeletal Deformity	117	108	9	
700-714	All Other Diseases of Skin	1507	1289	218	
731-736) 738-744)	All Other Diseases of Musculo-Skeletal System	795	664	131	
750-759	Congenital Malformations	31	23	8	
760-762	Birth Injuries	12	3	9	2
765	Ophthalmia Neomatorum	8	6	2	
770	Haemolytic Disease (Neo-Natal)	6	1	5	5
773-776	Other Diseases Early Infancy	233	169	64	32

/Senility

Detailed List No.	Group Causes	Total Cases	Out-patients	In-patients	Deaths
791	Senility	22	14	8	1
788-9	P.U.O.	363	279	84	4
788-1- 788-7 788-9 789-792 795	All other Ill-defined Causes of Morbidity	283	262	21	2
793	Observation without need for further care	708	348	360	

"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (EXTERNAL CAUSE)

E810-E835	Motor Vehicle Accidents	694	350	344	17
E800-E802	Other Transport "	207	85	122	5
E870-E895	Accidental Poisoning	134	61	73	8
E900-E904	Accidental Falls	1594	1086	508	1
E612	Accidents caused by Machinery	232	168	64	
E916	Accidents caused by Fire	257	170	87	17
E917,E918	Accidents caused by Hot substances and corrosives	245	192	53	
E919	Accidents caused by Firearms	16	13	3	1
E929	Drowning	2	2		
E910-E913- E915,E920- E928,E930- E965	All other accidental causes	2663	2096	567	3
E970-E979	Suicide & Self-Inflicted Injury	130	129	1	
E980-E985	Assault, Homicide	1221	538	683	16

"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (NATURE OF INJURY)

N800-N804	Fracture of Skull	144	23	121	18
N805-N809	Fracture of Spine & Trunk	73	37	36	3
N810-N829	Fracture of Limbs	1012	464	548	2
N830-N839	Dislocation	74	49	25	
N840-N848	Sprains & Strains	880	762	118	
N850-N856	Head Injury (Excluding Fracture)	415	262	153	1
N860-N869	Internal Injury, chest abdomen and pelvis	75	29	46	6
N870-N908	Laceration & Open Wounds	2651	1750	901	13
N910-N929	Superficial Injury contusion	1207	956	251	
N930-N936	Foreign Body entering through Orifice	143	102	41	
N940-N949	Burns	528	364	164	17
N960-N979	Effects of Poisons	135	67	68	8
N950-N959) N980-N999)	All other effects of External Causes	58	35	23	

/Medical

Detailed List No.	Group Causes	Total Cases	Out-patients	In-patients	Deaths
Y00	Medical Examinations, Boards and Tax Exemption Examinations	5822	5822		
Y02	Prophylactic Injections				
	(a) Smallpox Vaccination	3506	3506		
	(b) T.A.B.	691	691		
	(c) Diphtheria, Whooping Cough and Tetanus	145	145		
	(e) Diphtheria & Whooping Cough	500	500		
	(f) Tetanus	200	200		
	(g) Poliomyelitis	97	97		
	(h) Yellow Fever	266	266		
Y06	Ante-Natal Examinations	5915	5915		
Y08	Attendants admitted as In-patients with sick children	897	897		
TOTAL "NEW" PATIENTS		93,074			

SUBSEQUENT ATTENDANCES.

Subsequent Ante-Natal Attendances	3,965
Subsequent Prophylactic Injections	2,289
All Other Subsequent Attendances	56,011
Grand Total Subsequent Attendances	62,265

APPENDIX VI.

SWAZILAND

GOVERNMENT NOTICE NO. 33 OF 1963.

GOVERNMENT HOSPITAL CHARGES

It is hereby notified for general information that with effect from the 1st June, 1963, the scale of charges set out in the Schedule hereto shall apply to all persons at Government Hospitals and Clinics.

2. Government Notice No. 66 of 1960 is hereby cancelled with effect from the 1st June, 1963.

W.A. RAMSDEN

Acting Government Secretary

The Secretariat,
Mbabane.
May, 1963.

SCHEDULE

All members of the public shall have the option to avail themselves of the full paying services or the part-paying services offered by Government hospitals and clinics on payment of the following charges and subject to the following conditions:-

1. WARD CHARGES

(a) Full-paying services:-

1. All accommodation shall be in semi-private wards at the following rates:-

Adults	R 4.00 per day
Children aged 5 years and under	2.00 per day
Attendants of sick children admitted with the consent of the Medical Officer	2.00 per day

2. The above charges include stock mixtures, stock tablets, stock dressings, and such drugs as are in routine use for pre-medication, analgesia and sedation. All other drugs shall be ordered on the patient's account from a chemist or where that is not possible, they shall be supplied from hospital stocks on a replacement basis.

(b) Part-paying services:-

1. (i) Accommodation in semi-private wards (when available) shall be at the following rates:-

Adults	R 1.00 per day
Children aged 5 years and under	.50 per day
Attendants of sick children admitted with the consent of the Medical Officer	.50 per day

Contd...

(ii) Accommodation in general wards shall be at the following rates:-

Adults	.25 per day
Attendants of sick children admitted with the consent of the Medical Officer	.10 per day
Children aged 5 years and under	.10 per day

2. Adults in general wards may request a supplemented diet for which an additional 50c. per day per person will be charged.

3. Waiting maternity cases until admitted to ward shall each pay a charge of 10c. per day.

4. The charges listed under sub-paragraphs (i) and (ii) above include all drugs (including anti-biotics and steroids) and dressings approved by the Director of Medical Services for use in general wards.

5. No charge will be made for drugs, X-ray examinations or accommodation required by any patient treated in the part-paying sections of a Government hospital for enteric fever, epidemic typhus, smallpox, diphtheria, acute poliomyelitis, meningecoccal meningitis, plague, malaria, tuberculosis, venereal disease or leprosy.

2. OPERATING THEATRE CHARGES.

(a) Full-paying services:-

Major operation	R 10.00
Minor operation	R 4.00

(b) Part-paying services:-

Major operation	.50c.
Minor operation	.25c.

3. X-RAY FILM CHARGES.

(a) Full-paying services:-

Examinations shall only be carried out by appointment.

For each dental X-ray film	R 1.00
For each other X-ray film	R 2.00

(b) Part-paying services:-

For each X-ray film (whether dental or otherwise)	.25c.

4. OUT-PATIENT CHARGES.

(a) Full-paying services

1. Consultation shall be by appointment with a Medical Officer of the patient's choice. Charges for medical attention shall be at the normal rates charged by medical practitioners in private practice.

2. Medicines will be obtained on prescription from a chemist.

Contd....

Where no chemist is available all expensive proprietary preparations shall be issued on a replacement basis only, and other medicines shall be supplied from Government stock at the following tariff:-

All stock mixtures	16 doses for 30c.
Stock gargles and lotions	8 oz. for 30c.
Stock ear, eye and nose drops	½ oz. for 20c.
Stock ointments	1 oz. for 10c.
All "routinely stocked" tablets	24 for 25c.
Stock liniments	1 oz. for 10c.
Stock injections	per injection 50c.
Stock dressings	per dressing 10c.

(b) Part-paying services:-

1. For each attendance

(i) in the out-patient department of a hospital .20c.

(ii) at a clinic .10c.

2. The above fees include medicines supplied from dispensary stocks approved by the Director of Medical Services.

3. Out-patients receiving part-paying services shall provide their own bottles for medicine whenever possible.

5. LABORATORY CHARGES.

(a) Full-paying services:-

Specific investigations and tests which may be carried out at the Pathology Laboratory in Mbabane, will be charged for according to the following tariff:-

Agglutination reactions	R 2.00
Serological tests for syphilis	2.00
Blood culture(enteric fever)	4.00
Stool culture (enteric fever)	4.00
Diphtheria culture	3.00
Full blood count	3.00
Differential white cell count	2.00
Microscopic examination of stool	2.00
Bacteriological examination of smears	1.00
Examination of urine (routine and microscopic)	1.00
Sensitivity tests (for commonly used antibiotics)	5.00
C.S.F. (cell count - protein glucose - chloride- and culture)	7.00
Blood urea, blood sugar, blood protein, blood bilirubin, blood cholesterol, blood calcium, acid blood phosphatase, alkaline, blood phosphatase, serum amylase	2.00 each

(b) Part-paying services:-

No charge.

6. AMBULANCE CHARGES.

(a) Full-paying services:-

15c. per mile.

Contd...

(b) Part-paying services:-

15c. per mile except for ambulance journeys authorised by:-

(i) a Government Medical Officer; or,

(ii) a registered or licensed Medical Practitioner; or

(iii) an Administrative Officer or police officer in a place where no Government Medical Officer is stationed; or,

(iv) a nurse in charge of a Government clinic;

which shall be free of charge.

7. SURGICAL APPLIANCES.

The cost of surgical appliances (crutches, artificial limbs, false eyes, spectacles, braces and the like) shall normally be borne by the patient.

8. SPECIAL CONCESSIONS.

(a) Government Officials:-

1. Government officials and their families shall obtain free ordinary medical attention. Free choice of a doctor may be restricted when the panel of the doctor concerned is full. No charge will be made for medicines, drugs and the like issued with the approval of the Director of Medical Services, nor for theatre, X-ray, nor laboratory services, with the exception of services not provided free of charge according to General Orders.

2. Government officials in the superscale posts and in scales A/P, T/E and P.1-6, and their families may receive attention in the full-paying sections of the hospital. For accommodation in a ward, however, officials on these scales and members of their families shall pay one half of the charges listed in paragraph (a) of the first item of this Schedule.

3. Government officials on scales C, S, and P.7-9 and their families shall obtain attention in the part paying sections of the hospital. For accommodation in a ward, officials on these scales and members of their families shall pay 50c. per person per day if admitted to a semi-private ward, and 10c. per person per day if admitted to a general ward. Admission to a semi-private ward in the part-paying section of the hospital may not be demanded as of right and will depend upon accommodation being available.

(b) Medical practitioners, etc., and clergy, etc.:-

Medical practitioners and practising physiotherapists, radiographers, nurses and the like who are not Government officials, and missionaries, and clergy of recognised religious institutions, and the families, who would be expected to seek their hospitalization in the full-paying sections of the hospital, shall receive treatment on the same terms and conditions as Government officials on superscale posts or in scales A/P, T/E and P.1-6, and those who would not be expected to seek their hospitalization in the full-paying sections of the hospital, shall receive treatment on the same terms and conditions as

Contd...

Government officials on scales C, S, and P.7-9. The decision as to where they may be expected to seek their hospitalization shall rest entirely with the Medical Officer in charge of the hospital.

(c) Workmen:-

The fees specified in this Schedule shall not apply to cases dealt with under the Workmen's Compensation Proclamation, 1963 (No. 4 of 1963) which shall be governed by the fees laid down in Government Notice No. 30 of 1963.

(d) Should a patient who has obtained or who is to obtain treatment in the part-paying sections of the hospital or clinic claim inability to pay the fees and charges payable for such treatment, as laid down in this Schedule, the Medical Officer in charge, or an officer delegated by him to perform that duty on his behalf, may remit the fees in part or in whole, as the circumstances may require.
